Goulstonian Lectures

ON THE STUDY OF

GASTRIC FUNCTION IN HEALTH AND DISEASE.

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LECTURE III.*

PART I.

ONE of the foundations of clear thinking in the natural sciences is classification. With symptomatology, or the science of the evidences of disease, it should not be otherwise; and yet, if we set aside the unsatisfactory division into "organic" and "functional," we find that the classification of the dyspepsias has remained to this day in a curious state of confusion. It has been one of the objects of my discussion to show that all gastric symptoms express only a derangement of function, for they may occur equally in the absence or presence of local organic disease and are shown to be due to disorders of tonus, peristalsis, and motility. The very word "dyspepsia" signifies disturbed function, but at an earlier date it was exclusively used to describe disturbances occurring independently of organic disease. Thus, Brinton,[1] in 1858, although he clearly foresaw that it must undergo further subdivisions, held that the term implies "not only that a certain amount of digestion is (though with difficulty) effected, but that this difficulty is not due to any serious structural lesion. To call by the name of 'dyspepsia' such an impairment of function as we find associated with cancerous or ulcerous destruction of the gastric tissues, would," he remarks, "obviously be almost as absurd as to call strangulation 'dyspnœa,' or to speak of a beheaded criminal as having been rendered 'insensible.'" In 1884 we find the late Sir Clifford Allbutt,[2] in his Goulstonian lectures, attaching a wider interpretation to the term and appealing for its proper recognition as implying not a disease but a symptom; in his own phrase, "it names not the causes nor the processes of the evil, but its consequences." Gradually there has followed a more general acceptance of this usage; I think most desirably so, for its employment in the original sense has been and still remains very harmful to medical practice. Even now dyspepsia is constantly employed as a diagnostic label, and while no physician would be content to enter a case in his index as a case of "dyspnœa" or "insensibility," "dyspepsia" and "indigestion" are apparently very frequent entries. The man of judgment, it is true, reserves the term for those cases in which he is persuaded of the triviality of the condition or in which there is a cause to be found in some corrigible error of diet or habit. There are others, however, who, whether from faulty tradition or training, obscure their own vision and postpone accurate diagnosis by a too ready substitution of the symptom for the disease. We must all be familiar with cases of ulcer, cancer, appendicitis, cholecystitis, pulmonary tuberculosis, alcoholism, tabes dorsalis, oral sepsis, or psycho-neurosis, in which dyspepsia has too long been regarded as a sufficient diagnosis either by the patient himself or by his medical attendant. And we must all have experience of cases of our own in which the surgeon or subsequent clinical developments have revealed the true cause of unexplained or ill-explained dyspeptic symptoms. Quite recently I was consulted by a man with a long and characteristic story of duodenal ulcer developing into an established stenosis with the symptoms and physical signs typical of that condition. He had been told by six medical men that he had "dyspepsia." A large proportion of all patients who are ultimately shown to have gastric or duodenal ulceration have had to remain content with a diagnosis of "dyspepsia" for months or years, and as the success of medical treatment in these cases and the avoidance of operation depend largely upon an early diagnosis, delay of this kind is, to say the least, unfortunate.

There is, therefore, good reason to plead for the employment of "dyspepsia" in its only permissible sense as indicating a group of symptoms for which a proper cause or causes must invariably be sought, and to urge that any future classification of the dyspepsias must be based on ætiological considerations. In the past attempts have been made to classify on a basis of main symptoms, and to this doubtful plan we owe the origin of such terms as "flatulent dyspepsia" and "acid dyspepsia"—excusable when they were coined but not to be accepted now. In descriptions such as "fermentative" and "atonic" dyspepsia we have witnessed an attempt to classify on the basis of a hypothetical pathology, which can now be superseded, for we have come to recognise that gastric fermentation is rare and that it is exceptional for it to occur apart from pyloric stenosis or obstruction; that hypotonus (for which the term "atony" is sometimes loosely substituted) is usually an ex ression of general ill-health; and that the nearest approach to genuine atony is the extreme grade of dilatation which only accompanies the later stages of obstructive pyloric or duodenal lesions. Even in the most recent editions of the well-known text-books of medicine there is a complete lack of uniformity and ordered teaching, and terms such as atonic dyspepsia and gastralgia abound. The most accepted plan would seem to be the very artificial classification into sensory, motor, and secretory neuroses, but it is difficult to see how the student can extract from these descriptions any clear conception to guide him in his practice. The division into medical and surgical dyspepsias can meet with no approval. "Surgical dyspepsia" is held to designate a type in which surgery may give or help to give relief, but it might equally well imply a dyspepsia which results from surgical intervention. In no class of case is it more desirable to avoid the cleavage between medicine and surgery which has been the tendency of recent years; in no class of case is close coöperation of medical and surgical opinion more fruitful in results.

If we accept, as a working basis, the conclusions arrived at in my previous lectures, it would seem reasonable to advocate the arrangement about to be described, which recognises at once the importance (1) of assigning to every case and type of dyspepsia a definite basic cause or group of causes; (2) of tracing the gradations between healthy and morbid states; and (3) of regarding all dyspeptic symptoms as expressions of disturbed reflexes. I am aware that this classification is an elementary one and that, consciously or unconsciously, a similar or identical classification must now be widely employed by others, but there cannot, I believe, be any harm in setting it clearly forth. At the least it may serve to emphasise the need for system in the place of present chaos, and to indicate that no such "disease" as "dyspepsia" exists.

Craven Moore [3] has outlined a not very dissimilar classification, and to him, although he gives it a somewhat different application, we owe the term "reflex dyspepsia," which I have previously employed in describing the dyspepsias falling into my fourth group.

CLASSIFICATION OF THE DYSPEPSIAS.

GROUP 1. *Habit Dyspepsias.*—Dyspepsias resulting from faulty physical habits. Examples: over-eating, under-eating, over-work, lack of occupation and exercise; insufficient mastication; constipation, or some combination of these factors.

GROUP 2. *Nervous or Psychogenic Dyspepsias.*—Dyspepsias due to faulty mental or nervous adjustment. Examples: nervous tricks such as acrophagy, nervous exhaustion,

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worry and anxiety states, hysteria, hypochondriasis, and refusal of food.

GROUP 3. *Toxic and Infective Dyspepsias.*—Dyspepsias due to (*a*) tissue poisons, and (*b*) general and local infective disease, and other and more obscure conditions interfering with general health and nutrition. Examples: (*a*) alcohol and tobacco; (*b*) pulmonary tuberculosis; oral sepsis; severe anæmias; states of general debility associated with auto-intoxication, muscular hypotonus, loss of fatty deposits, and visceroptosis.

GROUP 4. *Irritative Dyspepsias.*—Dyspepsias due to stimuli originating in a local or distal organic lesion. Examples: gastric and duodenal ulcer; gastro-jejunal ulcer; chronic infections of the appendix and gall-bladder; special sense disturbances such as astigmatism; and central nervous lesions such as tabes dorsalis.

GROUP 5. *Mechanical Dyspepsias.*—Dyspepsias due to gross structural disease or to surgical modifications of the anatomy of the stomach. Examples: pyloric stenosis; hour-glass stomach; chronic extensive ulceration; certain complications and sequelæ of gastric surgery; and carcinoma ventriculi.

It should hardly be necessary to point out that there is a frequent over-lapping of these groups. The causal factors cited in Group 1, habit dyspepsias, are not uncommonly associated with those cited in Group 2, nervous dyspepsias. A symptom such as vomiting originally due to a physical cause such as pregnancy may be perpetuated and aggravated in an apprehensive or hysterical subject and develop, as Hurst[4] has shown, into the so-called "pernicious vomiting" of pregnancy. Gastric ulcer and pulmonary tuberculosis may coexist. Mental worry and fatigue frequently aggravate the symptoms due to organic diseases such as duodenal ulcer. Two foci of irritation such as cholecystitis and appendicitis may be present in combination. Chronic duodenal ileus in association with emotional instability may produce dyspeptic symptoms which neither factor alone would have been capable of producing.

Every case of dyspepsia is indeed a general medical problem. In no other group of disorders are the balance and the perspicacity of the physician more severely tried, and in no other group is greater judgment required for assessing causal and contributory factors and for the interpretation of special findings.

A few years ago I was anxious to ascertain the distribution in practice of these five groups of dyspepsia. In a series of 267 unselected cases, for the most part carefully investigated, the percentages were found to be distributed as shown in Table VI. It should be

TABLE VI.

Group.	Per cent.
1. Habit dyspepsias	12
2. Nervous dyspepsias	24
3. Toxic and infective dyspepsias	12
4 and 5 (combined). Irritative and mechanical dyspepsias	52

mentioned that at that time I included alcoholic dyspepsia in Group 1 instead of Group 3, but the percentages would not be appreciably modified by the necessary interchange. Groups 4 and 5 I have here combined, as at that time I included ulcer in Group 5, and redistribution would now be difficult. The larger proportion of these cases, having resisted treatment, had been referred for a fuller investigation, so that it must be assumed that Groups 4 and 5 contain a much larger percentage of cases than they would do in the total population of dyspeptics. The figures probably represent, roughly, the proportions encountered in consulting or hospital practice, and indicate that even in this class of work about 50 per cent. of dyspepsias are due to extra-gastric causes of a general kind; of the remaining 50 per cent. from one-third to one-half are due to local lesions remote from the stomach. Craven Moore[5] suggested the term "reflex dyspepsia" for hyperchlorhydria, intending to imply the existence of an irritative lesion or of increased excitability of the nervous mechanism, or both, but since I shall endeavour to show that all subjective dyspeptic symptoms must depend on disturbed reflexes the term becomes unsuitable for purposes of the present classification. "Sympathetic dyspepsia" is also open to criticism, although perhaps it indicates more clearly the idea of sympathy between one viscus and another or between the stomach and distant parts of the body. For these reasons, and lacking a better appellation, I have employed the term "irritative dyspepsia" to describe those cases in which nervous stimulation or inhibition can be traced to a local focus of irritation.

In the case of a viscus like the stomach, whose nervous mechanisms are so complex and so incompletely understood, it is almost impossible to determine with precision the nature of the neural element in each of its disorders. The points at which an interference with the reflex arc may occur are numerous and the nature of the interference is often hypothetical. Observations which apply to the cerebro-spinal system do not necessarily apply to the autonomic nervous system. Nevertheless, a reference to the mechanisms influencing a simple cerebro-spinal reflex may help to simplify the conception of the reflex origin of dyspeptic symptoms. In the case of a tendon reflex we recognise that the response may be influenced (1) by a central or peripheral nerve lesion; (2) by varying the type or force of the peripheral stimulus; (3) by mental concentration or distraction, or by inborn or acquired temperamental qualities; (4) by physiological shortening, or lengthening, or by fatigue, intoxication, or disease of the muscle-fibre itself.

In the case of the stomach, too, the responses may be influenced (1) by central nervous causes, as in the vomiting of cerebral tumours and the pain and vomiting of tabetic crises; (2) by increased peripheral stimuli, as in gastric and duodenal ulcer, chronic appendicitis, or cholecystitis; (3) by mental or emotional causes influencing the conductivity or the threshold to stimulation of the sympathetic or para-sympathetic; (4) by the physiological characters, fatigue, intoxication, or disease of the gastric muscle-fibre itself. Both "pressor" effects, producing exaggerated muscular action, as in the irritative dyspepsias, and "depressor" effects, producing relaxation or inhibition, as in the dyspepsias due to fatigue and intoxication, are encountered.

If we now re-examine the five groups of dyspepsia in the light of these rather elementary considerations we find that in Group 1 (Habit Dyspepsias) the symptoms may be traced to the fact that the work demanded of the muscle-fibre is out of proportion to the requirements of the body at the time. In other words, there is fatigue, through overloading or over-activity, of the muscle-fibre. By diminishing the work of the stomach or increasing the requirements of the body on the one hand, or by more food and physical relaxation on the other, we rest or refresh the muscle and relieve the dyspepsia.

In Group 2 (Nervous or Psychogenic Dyspepsias) nervous conductivity has been depressed or enhanced on the afferent or efferent side by mental or emotional processes or by nervous fatigue; motor excitation and sensibility may both be increased, and not uncommonly fear of organic disease aggravates the condition and a vicious circle is established.

In Group 3 (Toxic and Infective Dyspepsias) muscular function (and possibly nervous function also) is deranged by the circulating toxins. In the toxic dyspepsias local influences, and in the infective dyspepsias general influences predominate. In tobacco dyspepsia sympathetic inhibition allows exaggerated vagal action so that a "pressor" effect is obtained, but in all the other toxic and infective dyspepsias "depressor" influences predominate.

In Group 4 (Irritative Dyspepsias) the peripheral stimuli are exaggerated by local disease of a mechanical or inflammatory kind, and excepting in the case of the special sense disturbances the effects are always of the "pressor" variety.

In Group 5 (Mechanical Dyspepsias) the symptoms are due to destruction of the continuity of the muscle-fibre, or to modification of the mechanisms which control emptying.

We are now in a position to discuss more intimately the nature of the main symptoms in the individual varieties of dyspepsia composing these several groups. For illustrations I have referred principally to my own case-notes and test-meal findings. For the notes of a few of his cases in the investigation of which it was my privilege to coöperate, I am indebted to Dr. A. F. Hurst.

1. HABIT DYSPEPSIAS.

In a small series of cases classified as belonging to this group it is noteworthy that all happened to be men. Of these more than half were between the ages of 27 and 35 and had seen war service. Throughout their service they had been entirely free from dyspeptic symptoms, notwithstanding that some of them had had symptoms before the war. They had returned to sedentary occupations, generally office life. In the remaining cases the patients were older or younger, but were invariably leading unhealthy and inactive or irregular and restless lives. The chief complaints were of discomfort and fullness in the epigastrium developing soon after food, flatulence, and a poor morning appetite, or a capricious appetite. In a few instances, however, the discomfort developed at a long interval after food and was eased by food. A clear definition and localisation of the discomfort were almost constantly lacking and physical examination revealed nothing abnormal. In cases in which anxiety and the fret of civilised toil are added to an unsuitable life discomfort may occasionally give place to real pain simulating that of organic disease. When I have had an opportunity of investigating cases of habit dyspepsia more closely I have found no consistent objective evidence of motor or secretory abnormality. In other words, derangement of function is usually too slight to be susceptible of demonstration by the ordinary physical or chemical methods, although its nature may be readily and reasonably surmised on clinical grounds. The nature of the response and the time of arrival of the discomfort are determined partly by the particular irregularity in the patient's mode of living, but partly also by the physiological characters or habitus of his stomach. Thus the man who takes normal or bulky meals at too frequent or normal intervals, or is of the hyposthenic type, experiences discomfort shortly after meals; while the man who goes too long without meals, or is of the hypersthenic or mentally overactive type, will be more liable to experience discomfort before meals. Treatment is seldom difficult if the patient can be persuaded of the origin of his symptoms. Regularisation of habits, readjustment of meal-times, a reduction in the quantity, particularly of bulky carbohydrate food, with increased exercise, on the one hand, or more frequent meals and relaxation, on the other, quickly bring improvement.

2. NERVOUS OR PSYCHOGENIC DYSPEPSIAS.

Of my cases indexed under this heading men and women provided an equal proportion. Almost without exception they complained of flatulence as a leading symptom and in many I noted active air-swallowing movements during the physical examination. Epigastric discomforts, and more rarely pain, were complained of, but the relationship of symptoms to food was less definite than in the other groups. Worry, fear, anxiety, and noises were the principal aggravating factors. Nausea and capricious appetite and heartburn were also mentioned, and this is the only group in which I have personally encountered the symptom bulimia. Fastidiousness in the selection of food and exclusion from the dietary of one article after another for its supposedly noxious qualities help to complete a familiar syndrome. There is a common association of other visceral symptoms such as palpitations or frequency of micturition and, in women particularly, of vaso-motor disturbances. Before investigating the group I had scarcely expected to find that flatulence was such a constant feature. It is presumably induced in some cases by one of the physical causes already mentioned, but I believe that anxiety alone may initiate the swallowing movements necessary for the production of the symptom. Radiographic and chemical tests reveal no constant departure from the normal. Such investigations should only be undertaken to exclude organic disease or for the specific purpose of relieving a phobia or providing stronger reassurance. Although, as I have stated, the discomforts seldom show an accurate relationship to food, I think they are more liable to develop at those times at which normal gastric sensations are evoked—that is to say, when the stomach is empty or recently filled. Furthermore, the nature of the response, as in other groups, is in part determined by the physiological type or gastric habitus of the individual.

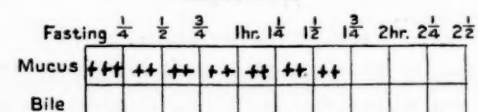
3. (*a*) TOXIC DYSPEPSIAS.

(i.) The symptoms of *alcoholic gastritis* are too familiar to require detailed description. They include nausea, retching, and vomiting due to irritation of the mucosa and excessive secretion of mucus, and all showing a particular liability to occur in the morning before breakfast; loss of breakfast appetite, due to impaired tonus; and morning and post-prandial diarrhœa due to the achlorhydria. The vomited material consists largely of mucus, and Hurst [5] has pointed out that much of this is derived from the œsophagus. It is often frothy and is consistently referred to by the patient as "phlegm." If pain is complained of it has rather a diffuse and burning character. The same syndrome, but generally in less pronounced form and without the other physical and psychological stigmata of alcoholism, occurs in gastritis due to excessive tea-drinking or gross oral sepsis. Beaumont's experiments on Alexis St. Martin and clinical experience with the gastric tube show that it is also possible for gastritis to occur without any local subjective symptoms. As has been previously suggested, the anorexia of gastritis is probably related to the general toxæmia and perverted metabolism of alcoholism, for in the earlier stages appetite returns with great rapidity when abstinence is insisted upon and almost before the mucosa could be expected to have become normal. Nevertheless the coating of mucus must inhibit those appetite sensations which depend on the ingestion of food, just as it inhibits the reflex secretion of gastric juice which normally results from contact of soluble food with the mucosa. The radiographic findings are variable and of no diagnostic importance. Hyperchlorhydria and achlorhydria both appear more frequently than in health, but achlorhydria is more common in established cases and increasingly so with the duration of the alcoholic habit—it is thus generally present in cirrhosis of the liver. The frequent association of achlorhydria with gastritis has been recognised since the introduction of the one-hour test-meal, but this method cannot detect delayed or transient rises in acidity. Bell,[6] in 11 cases of chronic gastritis examined with the fractional method, reported complete achlorhydria in five cases, hypochlorhydria and low normal curves in three cases, and hyperchlorhydria in three cases. Barber and Ryle,[7] examining 12 cases of acne rosacea, the occurrence of which apart from true gastritis—whether due to alcoholism, tea, or oral sepsis, or to a combination of these causes—is doubtful, found that seven cases showed complete achlorhydria, while of the remaining five one showed no secretion of free acid until after one hour and two showed a temporary high peak of acidity with an abrupt fall to the base line. The resting secretion in cases of gastritis with achlorhydria is small in amount and extremely viscid, consisting almost entirely of mucus. It sometimes has a peculiar rancid odour and microscopically may show an excess of pus cells. Before accepting the pus as of gastric origin it is important, as Ganz[8] has shown, to compare the cell content of the spittle and the fasting-juice. Mucus is generally present in excess

throughout the test. That the achlorhydria is not a permanent condition is shown by Charts 13 A and 13 B, which were obtained in a case of alcoholic gastritis, one before, and the other after lavage. A similar improvement may result from abstinence combined with other rational treatment.

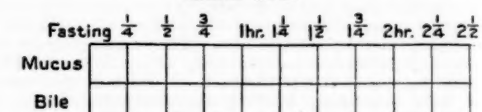
(ii.) *Tobacco Dyspepsia.*—Nicotine was shown by Langley[9] to paralyse the synapses of the sympathetic nervous system, so that we might anticipate dyspeptic symptoms from unopposed vagal action in habitual smokers. Although, however, we often prescribe a curtailment of tobacco in dyspeptic cases, and particularly in cases of duodenal ulcer, and although patients with duodenal ulcer not infrequently observe for themselves that smoking aggravates their symptoms, genuine tobacco dyspepsia is a rare condition. I have seen one case of a man with typical hunger pains and relief by food who was an excessive smoker of strong tobacco, and who had clearly recognised that he could invariably and completely relieve his symptoms by not smoking. In fact, his only object in seeking medical advice was to obtain a remedy which would enable him to go on smoking. It is, of course, conceivable that he may have had a duodenal ulcer or some other irritative lesion which required the additional influence of nicotine to waken the painful sensations. Unfortunately he did not give me the opportunity of investigating his case completely, but I have seen no other case of duodenal ulcer in which the symptoms could be wholly relieved by the simple cessation of smoking.

CHART 13 A.



Alcoholic gastritis.

CHART 13 B.



Same case as 13 A after lavage.

3. (*b*) DYSPEPSIA OF INFECTIVE ORIGIN.

(i.) *Dyspepsia due to Tuberculosis.*—The dyspepsia of pulmonary tuberculosis occurs in two distinct types or stages of the disease. It accompanies the active stage, when anorexia, pain after food, nausea, and vomiting are the principal complaints, and the symptoms of gastric ulcer may sometimes be very closely simulated. At this stage pulmonary and general symptoms predominate and diagnosis is seldom long in doubt. Secondary dyspeptic symptoms are also common in those chronic states of impaired health due to a pulmonary lesion which is presumed, on clinical grounds, to be healed; or in which pulmonary symptoms are lacking or inconspicuous or attributed to hilum tuberculosis; or in which the existence of lung disease has never previously been suspected at all. In such cases the symptoms are an exaggeration of the ordinary symptoms of a hyposthenic or fatigue dyspepsia. They include poor appetite and a fullness or discomfort developing soon after food, which is particularly troublesome at the end of the day when fatigue is greatest. The symptoms are relieved by rest. In either group appropriate treatment of the general condition, if it be followed by a favourable response in other respects, brings a return of appetite and improvement in the gastric symptoms. The radiographic and test-meal findings are variable, but hypotonus and hypoacidity predominate. Radiograms of the chest are more likely to be helpful in confirming a clinical suspicion of the cause of the dyspepsia than radiograms of the stomach. Leb[10] X rayed the chest in all patients he saw with dyspepsia associated with an "atonic" (hypotonic) stomach and found evidence of active or healed tuberculosis of the lungs in a large number.

(ii.) In *Visceroptosis* the dyspepsia is again of the fatigue or hyposthenic variety with feelings of discomfort and more rarely pain developing soon after food, poor appetite, and sometimes nausea and heartburn. Generally there is aggravation by the erect posture, and relief by recumbency. With extreme degrees of gastroptosis there is delay in emptying and with the test-meal either achlorhydria or a very low but slowly climbing type of acid curve is shown. X ray examination reveals an elongated "J"-shaped type of stomach with poor tonus and motility, the greater curvature low in the pelvis, and a constriction in the long vertical limb resulting from traction exerted by the weight of the barium. Of the cases of visceroptosis with undernutrition a considerable proportion would seem to be due to dormant pulmonary tuberculosis aggravated by domestic fatigue.

(iii.) *Anæmic Dyspepsias.*—The dyspepsias accompanying anæmia also simulate the fatigue type of dyspepsia and, as with the cardiac symptoms of anæmia, are probably due to muscle exhaustion from

deficient oxygenation. In chlorosis and secondary anæmias, heart-burn and nausea are special symptoms which seem to occur with more than accidental frequency. Acidity is generally low, and complete achlorhydria is not uncommon. In Addison's anæmia complete achylia is an essential part of the disease and not secondary to the anæmia; in fact, it precedes its development and persists even after the hæmoglobin and red cells have returned to a normal figure. The rate of emptying in most cases of achylia is rapid, and a painless morning or post-prandial diarrhœa is common. I have once or twice met with a complaint of hunger discomfort in association with achylia, due presumably to the rapid emptying.

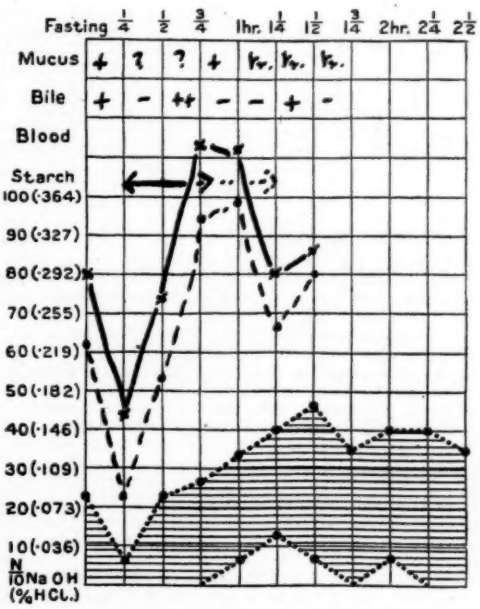
4. IRRITATIVE DYSPEPSIAS.

The painful dyspepsias due to reflex stimulation from an ulcer or inflammation of the gall-bladder or appendix have already been discussed at some length, and I shall here only draw attention to certain special features pertaining to each example. It should again be explained that the secondary gastric symptoms alone are under review and not the symptoms directly attributable to the local lesion.

Duodenal ulcer, from its close proximity to the pylorus and its constant situation, is the most true to type. The character of the pain is gnawing or aching or sometimes referred to as a feeling of great pressure in the epigastrium. Its localisation is in mid-epigastrium or to the right of this point. It is confined to an area which can usually be covered by the tips of two or three fingers, but it may be diffused about the epigastrium and sometimes rises into the chest. It commonly appears between two and four hours after the last meal, but the interval of time is determined by the size of the meal and the motility of the individual stomach. It varies greatly in its severity, but is only very occasionally completely incapacitating or agonising. Langdon Brown[11] has recorded excessively severe pain in the case of ulcers adherent to the pancreas; I have several times confirmed this observation, and the only cases of duodenal ulcer in my experience in which it has been necessary to give morphia for relief of the pain were complicated in this way. The pain lasts for varying periods up to and beyond one hour, in fact until the stomach is replenished or completely empty or until relief follows vomiting or the administration of drugs. The night pain shows the longest duration and may last for many hours because it is not automatically relieved by a meal. The pain is initiated and aggravated by hunger, or rather by readiness for food, by fatigue, cold, worry, and sometimes by smoking. It is relieved by food, rest, warmth, and peace of mind; by alkalies, and by belladonna and atropine. Appetite is usually good. The radiographic signs—namely, exaggerated tonus and peristal is, and sometimes rapid evacuation of the meal—need not again be discussed, but test-meal findings show certain characters which deserve closer consideration than I have previously given to them. The fasting juice in a considerable proportion of cases is increased in amount up to 80 or 100 c.cm. or more; it is perfectly clear, limpid, and highly acid and contains little or no mucus. After the initial fall in acidity due to withdrawal of the fasting specimen and dilution with the gruel, there is a steady rise to a high point, followed either by a steep drop with excessively rapid emptying as in Chart 14, or a sustained plateau with rapid or normal emptying and continuous after secretion as in Charts 15 and 16. In these cases there is evidence of a hypersecretion and continued secretion which are seldom found in other dyspepsias. In my own experience, hyperchlorhydria with the additional findings now mentioned is almost pathognomonic of duodenal ulcer. According to the combined figures of Bell[6] and Hunter[12] hyperchlorhydria is present in 70 per cent. and normal acidity in 30 per cent. of cases of chronic duodenal ulcer, while hypochlorhydria and achlorhydria are not recorded. As will be shown later, the test-meal findings in duodenal ulcer, in addition to being of contributory diagnostic value, may also give help in determining the suitability or otherwise of individual cases for the operation of gastro-j junostomy.

Gastric ulcers show a wider range of variability in position and their symptoms are consequently less defined. In so-called "typical" cases or in those with a story of hæmateme is a diagnosis may sometimes be made on the anamnesis alone, but it will be agreed that the history is often misleading. For instance, there may be vomiting without pain; flatulence or discomfort may be the only symptoms mentioned; and the time relationships to food of pain or discomfort are inconstant. The pain is greater with the deeper ulcers; it has the same character as the pain of duodenal ulcer in so far as it is described as gnawing or aching; it is felt in mid-epigastrium, or to the left of this point; it is confined to an area which can be covered by the tips of two or three fingers, but may be much more widely diffused. Excepting in old-standing cases with extensive ulceration and physical exhaustion or secondary anæmia, or in the presence of organic hour-glass contractions, it is seldom agonising or wholly incapacitating. It lasts

CHART 14.

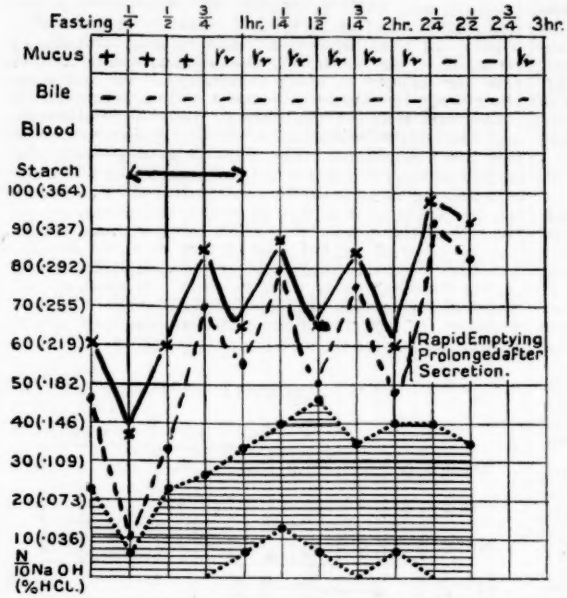


Duodenal ulcer with extreme "hurry."

for varying periods; is initiated by food, and more by solids than by fluids; and is more troublesome w th protein foods requiring prolonged gastric digestion. It is relieved by rest, starvation, and vomiting. Appetite is not good and the patient "is afraid to eat." Partly by reason of its higher incidence in women hypotonus is more common than hypertonus. The most important radiographic sign of perverted muscular function (and this is by no means constant) is the incisura or spasmodic hour-glass constriction. When the ulcer is situated close to the pylorus and the stomach is hypertonic the symptoms of duodenal ulcer are reproduced and hyperchlorhydric curves are obtained. Otherwise the fractional test-meal is of small diagnostic value, for every variety of curve may be given from achlorhydria to hyperchlorhydria, and normal curves predominate. In the combined series of Bell[6] and Hunter[12] the figures for ga tric ulcer were as follows: normal acidity, 57 per cent.; hyperchlorhydria, 33 per cent.; achlorhydria, 10 per

cent. In its objective signs, therefore, as well as in its symptoms, gastric ulcer is shown to exhibit a far less constant behaviour than duodenal ulcer. This irregularity can be related to its lack of close association with the pylorus.

CHART 15.



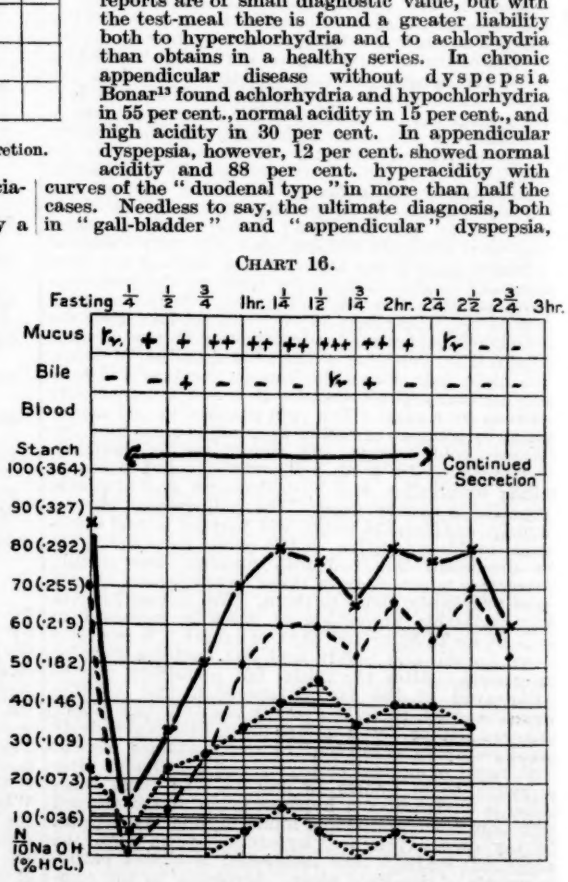
Duodenal ulcer with "hurry" and continued hypersecretion.

Jejunal and gastro-jejunal ulceration is usually a complication of the operation of gastro-jejunostomy performed for an active duodenal ulcer. The symptoms simulate those of duodenal ulcer—another observation suggesting that the type of dyspeptic response depends rather upon the physiological habitus of the stomach than upon the site of the lesion. The pain is more difficult to relieve with medical treatment and the ulcer is more intractable than is the case with the primary ulcer. X ray examination reveals no constant disturbance of function apart from that due to the gastro-jejunostomy. The fractional test-meal gives hyperchlorhydric curves, the acidity often reaching a higher point than before the operation.

Cholecystitis, and gall-stones with cholecystitis may or may not produce a secondary dyspepsia in addition to the local symptoms. In association with a hypertonic stomach the symptoms of duodenal ulcer may be very closely simulated; appearances suggesting pyloric spasm are seen with the X rays, and climbing hyperchlorhydric curves are obtained. Indeed, the differential diagnosis between gall-bladder disease and duodenal ulcer, as has been repeatedly observed, may be one of the most difficult in medicine, especially as both lesions give rise to tenderness and reflex signs in the right upper quadrant of the abdomen. Flatulence and epigastric distension are frequent complaints in these cases, and in well-nourished patients over 40 complaining of attacks of a "windy" dyspepsia which necessitates the loosening of clothes or corsets, the possibility of gall-bladder disease is always to be entertained. With a hypotonic stomach the symptoms of gastric ulcer are closely simulated and the test-meal shows hypochlorhydria or achlorhydria. In the chronic mild forms of cholecystitis without cholelithiasis, due to infection with *Bacillus coli* and occurring for the most part in sallow and poorly nourished women, nausea—according to my records—is described with greater frequency than in any other type of dyspepsia apart from that which accompanies early pregnancy. The nausea is often described as "coming in waves." It is usually associated with a poor appetite, whereas the more painful and flatulent "gall-stone" dyspepsias are compatible with a healthy appetite. The radiographic and test-meal findings, as suggested, are probably to be related to the physical type and gastric habitus of the individual, but the presence or absence of debility from auto-intoxication must be taken into account. According to Bonar,[13] achlorhydria occurs in 49 per cent. of cases of chronic gall-bladder disease coming to operation. Of the remainder of his series 29 per cent. showed normal curves and 23 per cent. hyperchlorhydria. He does not indicate what proportion of these cases were "dyspeptics."

Chronic appendicitis may or may not give rise to dyspeptic symptoms. Appendicular dyspepsia simulates both gastric and duodenal ulcer, the nature of the response again being determined by the normal habitus of the stomach and the presence or absence of auto-intoxication. The pain does not as a rule show such clearly defined characters as in ulcer and its relation to food is less constant. Radiographic and test-meal reports are of small diagnostic value, but with the test-meal there is found a greater liability both to hyperchlorhydria and to achlorhydria than obtains in a healthy series. In chronic appendicular disease without dyspepsia Bonar[13] found achlorhydria and hypochlorhydria in 55 per cent., normal acidity in 15 per cent., and high acidity in 30 per cent. In appendicular dyspepsia, however, 12 per cent. showed normal acidity and 88 per cent. hyperacidity with curves of the "duodenal type" in more than half the cases. Needless to say, the ultimate diagnosis, both in "gall-bladder" and "appendicular" dyspepsia, depends as much upon the direct and referred somatic signs of local disease as upon the reflex gastric phenomena.

CHART 16.



Duodenal ulcer with normal emptying rate and continued secretion.

According to Hurst,[14] patients with duodenal ulcer have stomachs of the hypersthenic type before they acquire their disease, and certainly the hypersthenic characters persist after healing of the ulcer. But in view of the fact that other and more distant lesions which can hardly be attributed to the hypersthenic diathesis are frequently found in association with hypertonus and hyperchlorhydria, it is also necessary to consider whether the gastric type may in some cases or some degree be determined by reflex stimuli from these lesions. The following figures from a small series studied by Dr. T. W. Turner and Dr. P. J. Briggs (communicated) suggest that the liability to hypertonus and hyperchlorhydria is greater with lesions below the pylorus, and that lesions above this sphincter influence gastric tonus and acidity in only a very small degree (Table VII.).

TABLE VII.—(*Turner and Briggs.*)

Disease.	Percentages (nearest whole figure).		
	Hypertonus.	Normal tonus.	Hypotonus.
Duodenal ulcer (50 cases) ..	43	55	2
Gall-stones and cholecystitis (44 cases)	21	76	3
Appendicitis (31 cases) ..	22	69	9
Gastric ulcer (16 cases) ..	13	67	20
Normal (Moody, Van Nuys, & Chamberlain) both sexes	12	78	10
	Hyperchlorhydria.	Normal curves.	Hypochlorhydria.
Duodenal ulcer (50 cases) ..	68	28	4
Gall-stones and cholecystitis (44 cases)	21	66	13
Appendicitis (31 cases) ..	19	75	6
Gastric ulcer (16 cases) ..	13	75	12
Normal (Bennett and Ryle) (males only)	15	80	5

The following cases illustrate types of dyspepsia produced by other forms of remote peripheral irritation.

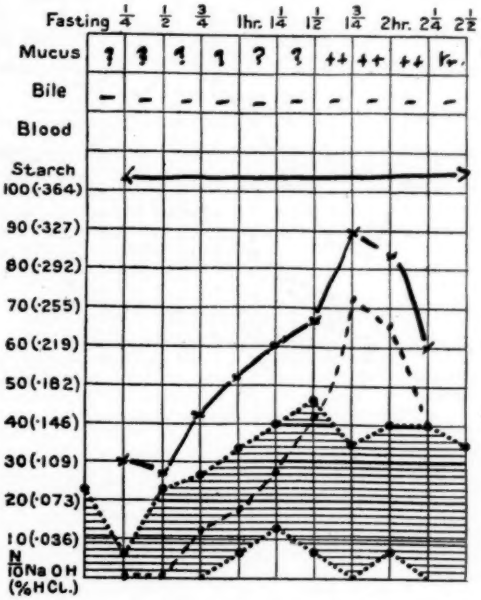
Irritative Dyspepsia Produced by a Fatty Epigastric Hernia. An old soldier, aged 52, complained of epigastric pain which had troubled him for three years, but which was becoming much more severe. The pain came on two to three hours after food and was relieved by food and hot water. He also had night pain. He had lost two to three stone in weight, and had particularly noticed that the action of stooping to lace his boots induced pain. There was a point of acute tenderness in mid-epigastrium. At this point a small fatty hernia through the linea alba was discovered which gave a slight impulse on coughing. The radiologist, Mr. Magnus Redding, reported a hypertonic stomach and spasm in the pyloric region. Mr. E. G. Slesinger operated and removed a protrusion of extraperitoneal fat which was causing tension upon and dimpling of the parietal peritoneum. The abdomen was simultaneously explored and no lesion of stomach, duodenum, gall-bladder, or appendix was revealed. The patient experienced no further symptoms and gained a stone in weight in the first month.

The extraperitoneal layer, of all the somatic tissues, is the one which becomes most sensitive in peptic ulcer, so the case further exemplifies the reversibility of the viscero-sensory reflex—a painful stimulation of the parietes, in this instance—calling forth painful contractions of the stomach.

In the special sense disturbances there is a particular liability to nausea and sickness as exemplified in the following case of ocular dyspepsia, and in migraine and Ménière's disease. They therefore constitute an exception to the rule that peripheral irritation produces "pressor" effects.

Ocular Dyspepsia.—A woman, aged 27, conscientious and of nervous habit, consulted me for attacks of nausea together with a certain amount of "indigestion" and flatulence. There had been a tendency to "sick attacks" in childhood, especially when she went to parties, but she remained free from symptoms between the ages of 8 and 20. The attacks complained of lasted from one to four days and were sometimes accompanied by a mild diarrhœa. They occurred at, roughly, three-weekly intervals and particularly on Sundays. The symptoms were usually most troublesome about an hour after breakfast or tea. She had a good colour, was not anæmic, and the physical examination showed nothing abnormal. Her eyes had been tested when the attacks began and were then pronounced normal. An initial rest from work and general hygienic measures gave no relief. Radiographic and chemical investigations were negative. The attacks became more frequent and she had to give up her work as a teacher. Finally, on re-interrogation she admitted to slight mistiness of vision and headache during the attacks. Mr. A. W. Ormond examined her eyes, found well-marked astigmatism, and prescribed appropriate lenses. In the next four months she had only one slight attack, reported herself as "ever so much better and stronger," and for some two years later has remained well. Headache was never a prominent symptom and there was no teichopsia, but obviously the case belongs to the same class as the migrainous dyspepsias.

CHART 17.



From a case of tabes with frequent gastric crises.

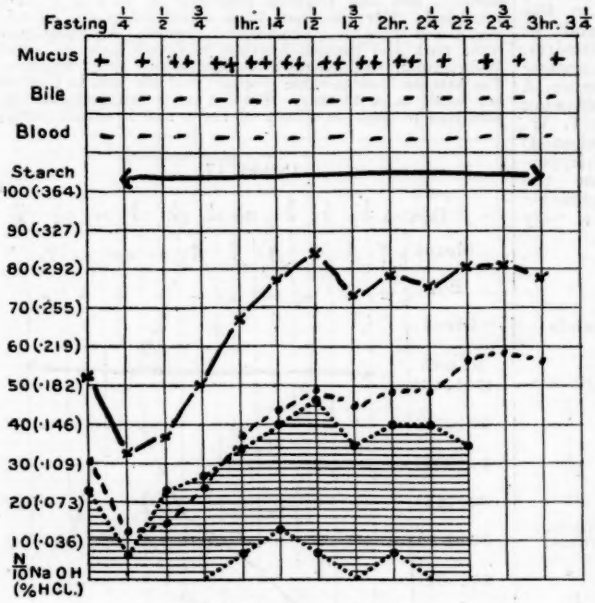
Tabetic Dyspepsia.—I have had no opportunity of close study of the disturbances of gastric function accompanying tabetic crises. Dr. C. P. Symonds tells me that he has observed the stomach with X rays after an opaque meal during a tabetic crisis and that peristalsis was greatly exaggerated. The severity of the pain in some cases; the persistence of the vomiting, often without much pain, in others; the abrupt arrival of the attacks at longer or shorter intervals without obvious reason and with no clear relation to food, occupation, fatigue, or other external circumstances are among the leading characteristics. Chart 17 was obtained between crises, which were occurring at very frequent intervals, from the only tabetic patient on whom I have had the opportunity of performing a gastric analysis at a time when gastric symptoms were predominant. The climbing curve suggests pyloric hypertonus.

5. MECHANICAL DYSPEPSIAS.

(i.) *Pyloric Stenosis and Obstructive Gastric Carcinoma.*—When stenosis develops from cicatrisation of

a duodenal ulcer there is a change in the character of the symptoms. Patients with pyloric stenosis (or obstruction) frequently state that their food "seems to stick" or "will not move on." To this curiously accurate interpretation of sensations due importance should always be attached. In the early phases there is a severe recurring pain associated with increasing peristaltic vigour. At a later stage, however, vigorous peristalsis may be observed through the abdominal wall without any apparent association of pain, and by the time copious vomiting has become a symptom there may be periods of remarkable freedom from pain. It would seem that the muscle-fibre, by the hypertrophy which occurs in response to over-use, renders itself less liable to fatigue and pain, much in the same way as a skeletal muscle becomes able to perform without abnormal sensations an effort previously only performed with distress. When dilatation finally ensues and the muscle-fibre is stretched the hypertonus and hyperperistalsis previously contributing to the production of pain are no longer present. As dilatation increases, the vomiting becomes more profuse and there may be intervals between the attacks of many days. Malodorous eructations, particularly after certain protein foods, are present at this stage, and such signs as the succussion splash and recognition of food taken long previously complete the picture. The radiographic signs need not again be mentioned. Charts 18 and 19 illustrate the results of fractional analysis in cases of pyloric stenosis from ulcer and pyloric obstruction from growth. The interval between free and total acidity in the case of obstructive carcinoma is much greater than is the interval observed in health, in pyloric stenosis, in simple achlorhydria, or in achylia, and is only comparable with that obtained after a protein test-meal. Graham [15] showed an increase in the mineral chlorides in gastric carcinoma, a change which he attributed to the neutralisation of acidity by alkaline exudations from the ulcerated surface of the growth. Before the introduction of the fractional test-meal this increase in the mineral chlorides in the single specimen obtained by the Ewald method was an important sign and much more significant than the reduction in acidity. Bennett [16] has shown that if the stomach is washed out in cases of obstructive pyloric carcinoma, normal curves of acidity can be obtained; he has also advocated the administration of charcoal overnight in suspected cases, and states that recovery of the charcoal in the first specimen, even though there is no gross stagnation of food, is suggestive of delayed evacuation and, in association with the chemical and physical characters of the first and subsequent specimens, may help in the early recognition of the disease. As I have suggested elsewhere,[17] close observation of the physical characters of fractional specimens may be of greater diagnostic value than estimations of the acidity. Whenever possible the physician, even if he does not carry out the actual analyses, should see the specimens himself and note their appearance, odour, mucus, and bile content, the presence or absence of blood, and the quantity of the fasting and final specimens. These observations are as much a part of the clinical investigation as the inspection of the vomitus or dejecta.

CHART 18.

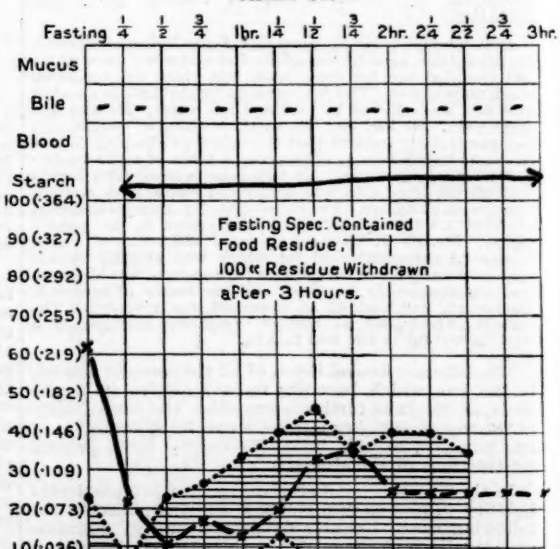


Pyloric stenosis (ulcer).

Hour-glass Stomach.—The symptoms of hour-glass contraction of the stomach are those of chronic ulcer of the lesser curvature with the addition of obstructive symptoms. The distended proximal segment may sometimes be seen through the abdominal wall or may be brought into evidence by an effervescing draught, but the diagnosis nowadays is most readily made by an X ray examination. Hypochlorhydric curves are obtained excepting in the presence of pyloric stenosis, when hyperchlorhydria is the rule.

The gastric symptoms of *Non-obstructive Carcinoma of the Stomach* are variable and depend largely upon the situation, character, and extent of the disease. The pain, when present, is more constant and often

CHART 19.



Pyloric obstruction (growth).

more severe than ulcer pain and is immediately aggravated by food. The frequency of anorexia has already been stressed. In some degree the dyspeptic responses even in carcinoma ventriculi may be determined by the physiological habitus of the stomach. I have in the past few months seen two cases of gastric carcinoma with a syndrome almost typical of duodenal ulcer. In both cases the patients were of the hypersthenic type, broad-chested and with a wide epigastric angle, and the pylorus itself was not involved. Achlorhydria, the development of which in association with carcinoma of the stomach was first shown by Golding Bird[18] in 1842, is less constant in non-obstructive than in obstructive carcinoma of the stomach, but it is generally found in diffuse carcinoma of the "leather-bottle" type.

I have reserved until the last a discussion of the derangements of function which follow upon the common operation of gastro-jejunostomy for ulcer and upon the complications attendant upon it.

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(To be concluded.)

An Address

ON

SUGGESTION IN SOCIAL LIFE.

Delivered at St. Bartholomew's Hospital, under the auspices of the Guild of Public Pharmacists, on Jan. 15th, 1925, with Lord Stanmore, Treasurer of St. Bartholomew's Hospital, in the chair,

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MY LORD, LADIES, AND GENTLEMEN,—In the first place let me express my sincere thanks for the compliment paid to me in asking me to address the Guild of Pharmacists, comprising, as I understand it does, the representative organisation of all pharmacists holding appointments in H.M.'s Services, as well as pharmacists serving in hospitals, infirmaries, and dispensaries.

It is difficult adequately to appreciate as they should be the necessary qualifications of the modern pharmacist without a feeling of wonder at his efficiency, and it is clear that he, of the future, will have a much more complicated list of subjects to master than his predecessors have had, and for this responsible duty he must possess a mind above the average order if he is to prove a competent pharmacist. I looked up the meaning of this word in the new Oxford Dictionary and I find it means one who prepares and dispenses medicines, pharmacy being described as a medicinal potion, but I think this meaning too narrow, for let me state here that the remedies the pharmacist is called upon to dispense are by no means the complete and final agents in the cure of disease: for the chief and proximate agent is the subtle, elusive, but yet definite powerful influence of one mind upon another—i.e., the power of suggestion—which in psychology is a mental process by which an idea becomes an act—in other words, the transformation of an idea into an act. The remedy is dispensed and taken in the firm faith, belief, and hope of a cure, the idea of recovery and restoration is believed in, it may be logical or illogical, but through suggestion the idea is apprehended as the means to secure health, and in this wonderful influence of suggestion the work of the pharmacist plays a considerable part. The value of the pill or the potion, the tabloid or the tincture is considerably enhanced by suggestion. The facility with which suggestion acts depends greatly upon the fashion or vogue which appertains to things at the particular time, and we shall see later that imitation plays its part in the influence of suggestion, and some knowledge of the mind is therefore necessary in order to understand how suggestion operates.

POPULARITY OF THE STUDY OF PSYCHOLOGY.

For this reason, and after some deliberation, I decided to take as my subject some aspect of the Mind, which is the inner experience relating to the feelings, to ideas, and to the power we have to react to these by the efforts of the Will, and I am strengthened in my decision by the fact that of late there has been a very great interest taken in problems of the mind, more especially since the war, and in the direction of studying mental suggestion. Ordinarily the term suggestion implies that one idea will recall another to the mind which has been previously associated with it, but throughout this paper I shall use suggestion as any idea which is followed by action, not necessarily when the person is conscious of it and not necessarily an act of the Will or Volition. Indeed, this result may take place under different degrees of consciousness, that is during the waking period, in partial sleep, or during the hypnotic state. It is for such reasons that the study of psychology has become so popular, and we probably tend, more than in the past, to examine into our own minds, a process called "introspection." We certainly tend more often to look into other people's minds, and by the process of "interpretation" draw inferences and reach conclusions not always too complimentary or fair to the objects of our experiments. It is not improbable that before long no one will be permitted to have a banking account unless he has satisfied a standard test at some psycho-technical laboratory. At any rate, there has been a revived interest in mental problems, as to how ideas have arisen and whither they tend. We are anxious to see how our ideas are sorted and arranged, how they combine to form motives, how motives may be analysed, and how behaviour and conduct are directed and controlled. It is claimed for this study that psychology has already helped to make child-life interesting, if not fascinating; that the dullest novel can be read with pleasure, and that bores when psychologically presented may be transformed into the most engaging personalities. As to this added interest in psychology let me use a simile—viz., the motor-car. No driver would ever dream of using a machine without first finding out something about its mechanism and how it worked. If he neglected this modest preliminary study, several interesting things might happen; perhaps the car

would not start, or if it started perhaps it would not stop, and the driver (or if he carried passengers, he and they) would soon experience thrills, to say the least; yet, in the study of the Mind many who claim to possess one are perfectly heedless about its mechanism, although the mind is much more complicated, and, may I add, more interesting also, than the motor-car. Fortunately for most of us, the human mind is to a great extent self-acting, but sometimes the mind does go wrong; indeed, it is only too surprising, considering it has about 9000 millions of neurons or nerve-cells in an average brain, that it so seldom goes wrong; yet when the mind is looked after and is attended to until it is understood, it is capable of superlative achievements, for it can carry us into great positions of power and distinction, and enable us to maintain these in spite of acute competition for a place in the sun. The advantages of an elementary knowledge of psychology are therefore clear; it enables each of us to understand our own mind, and how it works, as also that of our competitor, the practical result being to save us endless trouble in the acquisition of knowledge and in its application when acquired, although, luckily, many of us do manage without special study to acquire some knowledge of the working of our minds empirically (Glover) and also to attain comparative success. When our minds are managed rightly and our thoughts are arranged in an orderly and methodical way, we are enabled more easily to follow our various occupations, to find more pleasure in our work, to use our leisure more happily, to select the best companions, even a husband or a wife. We also learn to control our will-power and so to make resolution strong and temptation weak. Indeed it is difficult to see how we can advance at all without some knowledge of psychology. Pope maintained that the proper study of mankind was man and that the chief thing in man was Mind.

ELEMENTARY SENSATIONS.

Like the material world which is made up of atoms and electrons, the mind is also made up of elementary sensations—hearing, sight, taste, smell, and touch. Sensations are the most elementary mental processes we can experience, and they are incapable of being further split up even by the most persistent introspection or examination of our own minds, but pure sensations are only possible during earliest infancy, for we soon begin to think not in atoms as it were, but in molecules; our sensations tend to be associated together and with other things, so that sensations become percepts, which is the next mental process in development and an active one. The various sensations, therefore, coalesce and merge into a united whole, giving us the percept—e.g., the buttercup is not only yellow, it is form, size, touch, and feeling; its acrid taste is also "associated" with it, in other words; it is now a percept and no longer a simple sensation of yellow, but we can proceed further in our mental evolution and we can recall the flower in its absence which gives us the image, or the idea of the flower, and we can proceed further still, for we can in imagination group these flowers into classes or form concepts of them. Such a process as this is abstraction, and is the constructive work of the genius who out of different groups of ideas constructs new combinations, new mechanisms, new plots for stories, poems, pictures, and great original works of art. We should therefore all try to cultivate our senses, be precise and accurate in our percepts, form the habit of appreciating clear ideas of percepts and group our ideas into concepts, and from these construct new synthetical groups or classes. Such a study is the high road to a well-developed mentality, to the full realisation of self, and to the final achievement of our ambitions, aspirations, and aims.

IDEAS ANALYSED.

It is an ascertained fact in psychology that only a few of the many ideas experienced or combined can be in our mind at any particular moment—i.e., can be attended to in the focus of consciousness, because this focus of the attention is a very limited field, and if we analyse our own minds at this moment—or now—our ideas would probably come under five heads:—

1. Impressions of things around us in this great hall with its interesting records.
2. Some bodily or other sensation—e.g., from sitting on hard chairs, or in cold corners.
3. Some memories of past events, such as last week's clever performances here.
4. Some feeling of pleasure, or the reverse.
5. Some promptings of the Will, which are either to sit still and listen, to make some apt or inapt comment, to express approval, or to pick up our hats and walk out.

These would be in the focus. All other ideas would be outside the focus, or threshold of consciousness; they might perhaps be on the verge of this field in the subconscious mind and liable to be recalled, for our subconscious minds are the parts out of which ideas are recruited by an effort of the Will; on the other hand, they may be quite inaccessible, because buried in the unconscious mind, which, as stated, we all possess. We know, or our intimate friends know, that under certain sets of circumstances we would act in a certain way—that is, our inherited traditions, our upbringing, education, and surroundings have already unconsciously formed our "bias," for we each of us has certain leanings, a certain "bias" of which we may not be conscious; yet we realise that it somehow or other unconsciously influences our tendencies to act. We cannot, therefore, too highly value the very great importance of good traditions—such as we possess here—the good education and good surroundings which together unconsciously help to make, in our own profession, what is euphemistically described as the best type of doctor—viz., the Bart.'s man. Consequently, I cannot too forcibly demonstrate to you these three layers of the mind—viz., the conscious, the subconscious, and the unconscious mind—upon each of which suggestions can act. The violinist plays, but is not conscious of reading the notes. I walk along a rough road, and unconsciously avoid obstacles. The organs in our bodies work unconsciously as do most of our reflexes, and if consciousness were our only mental life it would indeed be a poor and narrow one.

It is an extraordinary thing, but still a truth, that all ideas in the mind exist in a perfectly chaotic, confused mass, until summoned into order by the attention. They are all struggling together in competition to get into the field of attention, they are all striving to cross the threshold and to reach the focus, or as it has been also called, the dome of the mind. All ideas tend, if they can, to rise to the top of the dome, which they are more likely to do if they are linked up with some pleasurable feeling or an emotion, for we tend to retain happy thoughts and to cast out or to repress the opposite, hence the importance of cultivating the happy side of life, for happy suggestions tend to raise and exalt all the vital functions; they tend to quicken that inherent tendency to the normal which is characteristic of all living tissues; that disposition towards health or that equilibrium which doctors describe as the *vis medicatrix naturæ* and which is always sensitive to suggestion, good or bad. It is a fact that once ideas get into the dome of the mind, or into the focus of consciousness, they become distinct and clear, because the attention or the will is fixed upon them, but even when within the dome they cannot be kept there, they soon pass out again to give place to other ideas, and it is stated that no group of ideas can remain in the focus of attention for more than 30 seconds.

It is because of this constant current of ideas to reach the dome that the Mind has been compared to a stream, always coming and going, always flowing. Many ideas are too feeble ever to reach the dome, and it is only the emotional tinge—the fear, the hope, the hatred or love, or the pleasurable sensation—

attached to the idea that secures its arrival into the focus of consciousness. Ideas are not socialists, they hate equality; they are constantly and continuously competing and struggling to reach the dome, and it is clear therefore that a suggestion made to the mind with its appropriate feeling may reach the summit if the feeling attached to it is sufficiently strong. An inscription over the entrance into our school buildings, "Whatsoever thy hand findeth to do, do it with thy might," is a suitable suggestion to reach the dome, and success depends on the feeling attached to it and its application.

THE ACT OF REASONING.

Although ideas in the mind, until focused, are confused and chaotic they nevertheless do tend, of their own accord, to assort themselves, but only according to certain laws; for instance, those that are similar tend by their similarity to be grouped together—e.g., a cross-Channel passage suggests certain unpleasant sensations felt on a similar previous trip; a political meeting suggests disharmony, if not rowdiness, which occurred on a similar occasion elsewhere; and Harley Street suggests eminent doctors, for we knew at least one there. Also, those ideas that have occurred together in point of time tend to be associated by "contiguity"—e.g., picking primroses suggests early spring; an acid and alkali together will burst the stoppered phial, and to suggest their association is to expect a calamity; to be stopped on a clear road by a policeman when motoring suggests the question of speed limit, for the event has occurred before. We cannot have ideas without feelings, and with them a time element or a likeness to others, for they must first be judged or cognised, which is an act of the Reason. In Reasoning we pass from one judgment to another deductively when we reason from general principles to particular cases. It is the work of the Reason to criticise and to compare ideas, but the Reason is much influenced by the feeling associated with them, in other words, by their affective tone—i.e., whether such ideas be pleasurable or painful.

WILL-POWER.

There is one other element of the Mind beside the feelings or sensations, and the Reason, which we have not considered, yet it is the most important of all; indeed, it is the only one that differentiates man from the lower animals. This is the Will, the power of inhibition, of self-control, the power to say "No!" It is by the exercise of this faculty that man can claim to rise to a higher sphere of action and conduct. It is the Will that suppresses the passions, that governs the instincts, and controls the emotions associated with our perceptions, ideas, and concepts, and so prevents their exercising an undue influence over our actions. It is the Will that collects the momentary sense impressions, the fleeting ideas that pass in the flowing stream, of the mind, and it is the Will that collects the memory pictures stored up in the brain cells and brings them into the focus or the dome of attention. In the whole mental field it is the Will which occupies the sole directing position. For instance, when preparing this paper I had to fix my attention, to experience many struggles in order to exclude distracting ideas, and to prevent my mind from wandering into other channels. At times I had to use a mental effort to keep my attention fixed on my subject and so complete the task I set myself to perform. It was a conscious effort, but it was essential that I should finish my task; and the conscious effort was the measure of my Will-power or of my volitional exercise. In the opinion of competent psychologists there is still another source of action in addition to and apart from the Will, and that is the ower of suggestion, which arises from an idea within the Mind. The starting point of suggestion is some idea, which may not be apprehended by the conscious mind, but if it is, it then becomes a "direct" suggestion; the clergyman in the pulpit makes a direct exhortation or suggestion to his congregation, the surgeon advises an operation, or M. Coué commands his patient to repeat he is every day getting better and better; and when I present a complicated prescription to the pharmacist it is a case of direct suggestion that I want it dispensed, it is a transformation of an idea into an act, and the suggestion may be our own from within (auto-suggestion) or through others from without (hetero-suggestion), yet even a hetero-suggestion becomes an auto-suggestion in the end.

"DIRECT" AND "INDIRECT" SUGGESTIONS.

As we know, the Will and the Reason exercise an inhibitive or a controlling power over suggestions: it is, indeed, the whole aim of education to control and direct the mind and so to prevent irrelevant suggestions from intruding upon it. Thus there is always a struggle between the orderly control of the Will and the sudden impulse to act on suggestions. The influence of "direct" suggestion is less powerful than is that of "indirect" suggestion which occurs when the mind is at rest or inactive; indeed, when the mind is fully occupied and engrossed it is difficult to get any direct suggestions to act, as is recorded of the philosopher whose wife was about to present him with an addition to their happiness, for when the nurse announced, "Please Sir, it's a boy," he coolly replied, "Ask him what he wants, I am busy," and later when the nurse called out, "Your wife is dying, Sir," he replied, "Tell her to wait till I come"; or as was the case with another searcher after truth who was equally engrossed in his meditations, when the messenger rushed in with the alarming news that the house was on fire, he calmly requested the messenger to convey the news to his wife, as he never interfered in domestic affairs. These, and stories of men in action being so overwhelmed with mental excitement as not to know they were wounded, show that when the Mind is fully absorbed suggestion acts with difficulty, there is no room for distracting thoughts from without; but when the mental tension is relaxed the influence of suggestion is exceedingly strong, for the imagination then runs riot, the Will and the Reason are both suspended, and the Mind is free to wander in obedience to half-conscious suggestions. In mental states of reverie, "mooning," or abstraction, the mind is in a suggestible state ready for new ideas to be presented. Children when playing games are thus suggestible and are being unconsciously moulded in conduct and character every minute, and therefore good suggestions by example and precept are most important, which supports the view of the Jesuit, that if he had the care of the child for the first seven years, anyone can have it afterwards; implying that unconscious suggestion would by then have become so organised that no subsequent influences could neutralise those from early teaching. Such "indirect" suggestions made in infancy leave indelible traces on the mind, which is "wax to receive and marble to retain," and so, impressions of training once received in early life have the quality of permanence; nevertheless, we are unconscious of them, as they do not ordinarily reach the conscious mind; but yet, in spite of this, they form the trend or tendency or bias of the individual in later life, and it is upon the indirect influence of early suggestions that the permanent conduct depends. The periods just before sleep or just before awaking are the most favourable to suggestion, as we know ghost stories are more readily believed in towards the hour of sleep, partly because suggestibility is most marked at the period of approaching sleep and partly also because of the state of fatigue then felt, when there is less vigour to resist suggestion. It is claimed that suggestions from the mother repeated nightly whilst the child is being put to sleep must bear good fruit in after life. Sleep is not necessary to suggestibility, it only facilitates it; as we know to be the case in the hypnotic state, which is one of artificial sleep. Some of us may have suddenly awaked from sleep

and felt we had lost our way in a strange place and we have got up under the influence of this suggestion and searched for aid; and it is a fact that some persons under the influence of suggestion during sleep have been able to solve problems that have bewildered them when awake. In illness it is the same, and advantage is then taken of this readiness to receive suggestions, to create an impression upon the patient by the solemn manner of the doctor, whilst his top hat, and the mysterious and horrid medicine in formal bottles help the suggestion of impressiveness. All doctors know the value of suggestion in the treatment of disease, and a classic case was that recorded by Sir James Paget—a name greatly revered in this school. This patient's mother who brought her told the great surgeon "She will not walk." The patient said, "I cannot walk"; but Sir James Paget summarised the truth by saying, the fact is "she cannot Will"—i.e., until the weakened will-power was strengthened by belief in the cure, she could not recover, but would continue helpless until suggestion presented the idea of recovery and this, with its emotion, would rouse the latent power into action. In the mental out-patient department at this hospital a paralysed lame girl was at once cured by suggestion.

During the war a soldier who had been blind for months regained his sight at once when the suggestion was convincingly made to him that he would see. Many aphonic soldiers and several who were deaf, from functional lesions, were immediately cured, as also many who were helpless and paralysed; and our case-books have many records of such cures by the influence of suggestion. It is useless as well as unkind to tell a person who cannot cross the street, or remain in a closed room, or who believes himself to be paralysed that he can be well if he chooses and that his malady is an imagined one. He will only conclude his case is not understood and he will go away worse than he came. He will probably go away also in the firm belief that his case is incurable and chronic and that he himself has been regarded as a shammer and a malingerer. No appeal to his conscious reason will be of any avail, but suggestive treatment to his subconscious mind will cure him at once.

"PRESTIGE" SUGGESTION.

The influence of suggestion coming from a great institution of authority such as Bart.'s, with its great traditions of the past, and the present accumulated wisdom and knowledge of skilled teachers such as we possess here, gives to the treatment of the patients in this hospital what is described as "prestige suggestion," and is an undoubted aid to the healing powers so successfully employed here. It is not only the students that are impressed by this, but the physicians and surgeons must also profit by these suggestions. The same kind of influence acts as a source of great power when emanating from high social rank, or from some great source of mental ability, or some marked physical strength, or from some other great power; hence the influence of the Deity when invoked in the work of spiritual healing, as we have lately seen, will help considerably by suggestion, and will add to the number and permanence of the cures. My influence will probably disappear when I have withdrawn, but the influence of the Deity will remain. States of mind described as "day-dreaming" or "castle-building in Spain" are half-awake conditions, and thoughts or ideas suggested to the Mind in these states are accepted as a normal experience and believed in because there is a partial suspension of the Reason and the Will, and therefore there is no voluntary direction to change these ideas in the Mind, which comes to be entirely dominated by them, the more so when there is with the suggestion a belief and a faith together with an expectant attitude, as in spiritual healing. There is here the feeling that the result anticipated must be accomplished. The attitude of expectancy greatly intensifies the power of suggestion.

REPETITION.

Another condition favouring the influence of suggestion is repetition. George IV. repeated the statement so often that he was present at the Battle of Waterloo that in the end he came to believe it, and no argument to the contrary would convince him he was in error. An Oxford graduate used to walk regularly in Hyde Park when the auto-suggestion came to him that he should knock off people's top hats. He realised that it was an unconventional act and was impolitic and would be mildly resented, but the suggestion was so strong, relentless, and tyrannical, and it was so dominating and persistent that he felt it was wrong to resist it, with the result that he was brought to me at Claybury, and his case is probably familiar to many old Bart.'s men. As to dominating ideas, which are extreme cases of auto-suggestion, every asylum has its kings, queens, peers, and others because the ideas suggested are in harmony with their own mental trends or tendencies, and no persuasion can dispossess these persons of their dominant ideas. In insanity the Will and the Reason are no longer able to command the thoughts, and therefore the Mind cannot judge or compare what is brought before it, whilst in the awakening from hypnotism the spell of the suggestion has been withdrawn. Sometimes suggestion is carried too far and the reverse or the counter-suggestion may be acted upon. Instead of the normal response to the stimulus, other stimuli contribute to the response, and the natural response to the suggestion is inhibited. The opposed ones upset the balance and the opposite of the suggestion occurs, because the response is not the result of the total of relevant stimuli, and so the suggested stimulus is inhibited. We all know the "cussed" fellow who when advised to avoid certain foods yet eats to his detriment, or when advised to take a holiday replies he does not need one. He takes a pride in doing the opposite to what is suggested, and often defies custom and ceremony. Such persons obey the "law of reverse effort," as M. Coué says, and they constitute our eccentrics, oddities, and singularities. Everybody knows that a committee or a board is a mathematical paradox: its collective wisdom is known to be less than the total of its individual members, yet what security is often erroneously conveyed to possible shareholders by suggest on when a long list of names figure on a prospectus, which would otherwise go into the wa te-paper basket. The "prestige" suggestion counts for much here.

"CROWD" SUGGESTION.

The crowd suggestion or mass suggestion also exercises a great influence upon the mind. Crowds of people are very impressive, and crowds of names on a petition often count for much more influence than would the names separately. Also, witness the great power in healing the sick exercised by pilgrimages to Lourdes, Sienna, Assisi, and other places where there are relics of the saints; and at Holywell in our own country; yet the proportion of cures is less than 5 per cent.—some say less than 1 per cent.—and if these statistics were set forth as claims for support by the London hospitals, they would soon cease to be supported. You, as pharmacists, know the changes that fashion and custom have caused through suggestion in the use of medicines and therefore in dispensing. Formerly the prescriptions that were most effective were the most nauseous and the most repulsive; the worse the disease the more horrid the remedy. Each disease had its sign, and could only be cured by the administration of the remedy with the corresponding sign; for instance, certain plants that resembled the bodily organs contained the remedies for these by their similarity to them, the lungwort, liverwort, madwort, pilewort were so prescribed. For epilepsy, 300 years ago, then, as now, regarded as rarely curable, the best remedy was the dried and powdered remains of a female mole for a male epileptic, and a male mole for a female, to be taken when the moon was in the sign of Virgo,

by which "much ease will result." For insanity the unfailing remedy consisted in injecting the juice of beet into the nostrils—probably a cure if it could ever be got up there. The plague was treated with a live pigeon cut in two parts and applied to the soles of the feet. The heart of a fowl, the liver of a mole, and the foot of a tortoise were probably the precursors of the poly-glandular tabloid and an anticipation of our present endocrine therapy. To-day the fashion is for vaccines, serums, and antitoxins, the blood being regarded as the great battle-field in which proteins and bacteria are contesting for a victory over globulins and precipitins—i.e., so long as the life of their host endured under the treatment.

GESTURES IN MEDICINE.

It must not be thought that we of to-day are free from "gestures" in medicine. Not long since it was suggested that human beings had in their natural evolution approached too near to the herbivora, and man's inside was too long. On the authority of a great surgeon everyone was advised to have his colon excised and his internal economy short-circuited, again transforming an idea into an act. The suggestion that persons should be divested of any part of the alimentary tube which had hitherto served to assimilate his nourishment did not receive a too cordial support and the vogue dropped. Fortunately, a more sensible view of the functions of the 32 feet of our inner tube was taken, but a new fashion was initiated—viz., intestinal antisepsis; and liquid paraffin became a popular remedy; so much so, it is stated, that shares in the Persian oil fields rose considerably in price on the Stock Exchange. How long the suggestion of internal lubricants or of intestinal disinfectants will last, it is not safe to predict; but it is certain that just as poly-pharmacy has had its day, so these suggestions, together with sandwiches of pancreas and endocrine preparations, may also have their day, and the treatment of the future may more and more tend to rely on commonsense to avoid "the first occasion of sickness," as the ancient physicians pronounced it, and "to take away the evil effects of the same," as was then taught, which is the encouragement of the *vis medicatrix naturæ*, or of the inherent tendency to get well that resides in every living tissue. At present some of the "colloids" are having a struggle to keep their places as fashionable remedies; but the latest suggestion in treatment is to provide a supply of vitamins, which have never yet been seen or separated by mortal man, yet they are resident in milk, vegetables, and fruit; and lest they be lost it will probably be suggested that man should once again reside in a garden and have his fruit and vegetables near, and also that his herd should be milked at his gate so that he should not lose the vitamins recommended to him. It must therefore not be assumed that we—of to-day—are free from using suggestions. The classic doctor in recent times was a bearded, middle-aged, grave, and pensive figure, sitting—as in Luke Fildes' picture—by the bedside of a sick child and more correctly holding a wooden stethoscope in his hand. To-day such a picture is out of date, being replaced either by an attractive lady or by a clean-shaven young man, dressed in tweeds, and holding in his hands not the stethoscope, but the hypodermic syringe and an ampoule, the up-to-date young physician duly deliberating how many cubic centimetres of detoxicated serum he contemplated injecting into his patient sub-cutaneously.

I am not certain whether the Freudian cult may not (according to Megaw) have suggested a still later picture of the doctor in which symbolism reigns supreme: the wooden stethoscope has now become a phallic emblem; the patient's attention is transferred to the analyst, whose position is also "father-confessor," the patient's mind, body (and estate) having been sublimated without resistance into his power. This picture may be further adorned by two statues erected to represent Œdipus Rex on one pedestal and the hypothetical Censor on another, both in perpetual conflict over the solution of a dream which is being dramatically related. The theme of this picture is "*cherchez la femme*"; a subject which has continuously, since the Trojan War, supplied material for the painter's canvas, but which of late has suffered an acute revival even in medicine.

SUGGESTION IN CLOTHES.

Possibly no suggestion is more powerful than the fashion set by clothes, and especially is this the case in our Western civilisation. Formerly clothes conveyed the distinction of a class and indicated rank. They therefore had to be distinct and striking. In this way they attracted attention and the clothes were probably admired. An old book on medicine, dated 1649, laid down as the duty of woman, "to serve God and to maintain man; to wear garments that were comely and strong—made to preserve health rather than to adorn the person." To-day things have changed, and a fashionably-dressed woman is no uncommon sight, for she is bound to attract attention and her clothes generally produce a powerful sensation, which can only be kept up by originality of design, and by some special style or new colour. A woman with a fashionable hat from Paris and stylishly dressed—however scantily or "cobwebby," or "feathery" this may be—is much happier and more self-confident than another who is dressed more healthily and more comfortably, but less fashionably, yet who is superciliously described by the others as a dowdy frump. Clothes more than anything else lose their attraction to their fashionable wearers when they become familiar and when they cease to produce a new sensation. So great to-day is the triumph of democracy that there is a marked tendency for the general adoption of one fashion by all classes; the only sign of rank and distinction being shown in the quality and cost of the material selected. When clothing indicated occupation, they were voluntarily worn by such as the clergy and the nursing profession, as also by the representatives of the law. These upheld in their garb the high rank and dignity of their calling. The costume that indicates occupation tends to be resented to-day by such as are in domestic service, whilst the railway official, the postman, and the policeman still retain their distinctive garbs.

FOOD AND THE ARTS.

The fashion in food has also very considerably changed in recent periods; a variety of foods, rather than the *pièce de résistance*, is the fashion to-day.

The influence of suggestion extends even to the arts, as witness the interpretation of the beautiful and the true by the futurist and the cubist, who are extravagant and misguided representatives of the artistic set.

Suggestion plays a greater rôle in our lives than we imagine. It is the basis of imitation and so begins unconsciously in very early life. Its highest form and probably its most agreeable presentation is in the best actors on the stage, who pourtray by imitation the most perfect characters that can be suggested to us—or the reverse.

Low-class cinemas play a great part in suggesting assaults, malicious damage, and theft to the sensitive minds of young people, who are not criminals but only eager for adventure. Many instances are recorded in the daily papers. A youth took a knife and with it stabbed another boy, and the father stated "picture-houses are to blame for the whole thing." A Dalston boy witnessed a hanging incident. He went home and repeated the occurrence with a fatal result. A boy burgled at Upper Clapton and confessed to seeing the whole thing done throughout at what he called the "public picture gallery," and there is no possible doubt but that pictures thus presented exercise through suggestion a marked evil influence on conduct in the sensitive and impressionable minds of the young.

CONCLUSION.

May I conclude by saying that the moral of this paper is that good suggestions should be made to the child and the young, as they are then unconsciously accepted by them and thus they tend to form a good background, so that the child may act upon the suggestions reflected into its mind, and in consequence its trend or mental bias in after life may tend naturally and unconsciously towards actions that shall have a high ethical value.

The highest suggestion for conduct is to do what we ought to do, and moral education consists in creating a desire for right conduct. A child (as well as most young persons) is essentially governed by feeling and not by reason, therefore its present work should be associated with happiness—which is the "universal quest"—and an endeavour made to suggest altruism or a consideration for the good of others, that restrictions and rules are made for the general good and not for the individual only. Positive training is always better than negative training; a child or a youth is always open to tactful suggestions and much help can be secured from one successful effort towards self-control because he is then reassured he has made one good step in the way of directing his will and controlling his desires and thoughts, and so to supplement and strengthen the higher good within him.

I have been permitted to make a suggestion to my audience, viz., that each may take a special interest in psychology—i.e., in the working of the human mind. It is a study that will well repay attention even in leisure moments.

ON THE TOXIN OF STREPTOCOCCUS SCARLATINÆ.

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(*A Report to the Medical Research Council.*)

THE ætiology of scarlet fever is a problem which has attracted the attention of bacteriologists over a period of many years, and, as research work has developed from time to time in various parts of the world, so there have arisen a number of theories in regard to the actual causative factor in the disease. For long, attention has been focused on the rôle of certain streptococci in this connexion, but it is only very recently that convincing experimental evidence has been brought forward in support of the view that streptococci have a definitely specific relationship to the disease.

The difficulty which workers in the past have had in establishing this relationship lies in the fact that it is not possible to produce in experimental animals a condition that in any way resembles the picture of scarlet fever as it occurs in man. Nor, as Hektoen[1] pointed out, had attempts at experimental inoculation of human beings with material taken from cases of scarlet fever proved successful till the published observations of Dick and Dick[2] in 1923. The first attempts made by these workers to produce scarlet fever in human volunteers were published by them in 1921 [3] and proved to be unsuccessful, probably because they used individuals who were actually immune to the disease by reason of their being urban dwellers. In their second series of experiments in 1923,[2] acting on the suggestion made by Hektoen that individuals drawn from rural districts might be found to be more susceptible than town dwellers, the Dicks succeeded in producing one case of typical scarlet fever out of five volunteers. Each of these was inoculated by swabbing the throat and fauces with the culture of a streptococcus obtained from an infected wound on the finger of a nurse who developed scarlet fever while attending a case of the disease.

With a further series of volunteers the Dicks [4] showed that the culture filtrates they were using at the time produced no disease, whereas whole cultures did so, and they concluded from this finding that a filtrable virus could be excluded as a causative factor in scarlet fever. The same observers [5] further demonstrated that the streptococci which are associated with scarlet fever produce a soluble toxin, and that this, when inoculated into susceptible volunteers in suitable doses, is capable of giving rise to all the characteristic signs and symptoms of the disease. Moreover, weak solutions of the toxin [6] when injected intradermally—in much the same way as diphtheria toxin is used for the Schick test in diphtheria—produce in susceptible individuals a skin reaction which provides an empirical measure of susceptibility to scarlet fever. Of persons who had not suffered from scarlet fever 41·6 per cent. gave positive reactions, while negative or only faintly positive reactions were to be found in convalescent scarlet fever cases. This reaction is known as the Dick test. The results of the Dicks have been confirmed by other American workers, notably by Zingher.[7]

The work embodied in the present report represents an investigation of the toxin of *Streptococcus scarlatinæ*, more particularly with reference to the best methods of preparing it, and special attention has been devoted to the preparation of stable products by means of precipitation. These latter, we believe, represent the first step towards a successful measure of the toxin, and so offer a method of approach to a standard Dick test.

Our experiments are still actively in progress, but we believe it to be desirable at this juncture to put forward certain of our findings.

The Dick Test.

The Dick test consists in the intradermal inoculation of suitable dilutions of the toxin of *Streptococcus scarlatinæ*. The amount of inoculum consists of 0·1 c.cm. or 0·2 c.cm. A positive reaction indicates that the individual is presumably susceptible to scarlet fever, while a negative reaction yields evidence that the individual is immune to the disease. A positive reaction begins to appear within a few hours, usually four to six, after inoculation, and reaches its maximal development in about 24 hours. It is represented by a local area of redness, varying in size and in intensity of colour. This area has, as a rule, well-defined margins, but it may at times merge gradually into the surrounding skin. Where the reaction is intense in character it is accompanied by induration. At 48 hours from the time of inoculation most Dick reactions have disappeared completely or have faded considerably, while in the case of strong reactions there may be a residual pigmentation and peeling. It may be said, therefore, that the Dick reaction differs from the Schick reaction in that it appears rapidly, lasts for a short time, and then disappears leaving little or no trace behind.

In all cases it is necessary when testing Dick toxin to use a control. For this purpose we have had recourse to the same toxin heated to boiling for one to one and a half hours, as recommended by Zingher. In practice it is convenient to inoculate the toxin to be tested into the skin on the anterior aspect of one forearm, and to inoculate the heated control into a corresponding area on the other arm. Areas of redness measuring 1·0 cm. or more in diameter are interpreted as positive, while areas of lesser size are to be classified as faintly positive. Where the control shows no reaction there is no difficulty in

interpreting results. If, however, there is a reaction on the control side—i.e., a pseudo-reaction—then the question of susceptibility or immunity resolves itself into a comparison of the two reactions. If the areas on both sides are equal, the reaction is pseudo-negative. If the reaction is larger with the unheated toxin, then it is described as pseudo-positive.

Preparation of Toxin.

The method of obtaining the toxin, as originally recommended by the Dicks, consists in the collection of condensation water from a series of inoculated sheep blood-agar slopes after varying periods of incubation. Other workers, including Williams and his colleagues,[8] have made use of horse-blood broth. Zingher[7] prepares the toxin from pneumococcus broth to which has been added 5 per cent. citrated horse blood. His cultures are incubated for five days, after which 0·5 per cent. carbolic acid is added, the resulting precipitate being allowed to settle out and the supernatant fluid being used for test purposes. Huntoon[9] obtained toxin most readily by using broth containing large amounts of horse blood, and by incubating the medium for seven days. To get rid of the foreign protein he acidifies the cultures with 1·0 per cent. acetic acid and then carries out a precipitation either with ammonium sulphate to 60 per cent. saturation or with sodium chloride to 20 per cent. saturation. In either case the resulting filtrate is dialysed before use.

The process which has given the best results in our hands is a modification of the original Dick method and is as follows. To trypsinised agar in the melted state and contained in a series of Roux bottles there is added fresh rabbit blood—1 per cent. to 2 per cent., or human pleuritic fluid—5 per cent. to 10 per cent. The medium after thorough mixing is allowed to set hard and the surface of the agar is then flooded with 2·0 c.cm. of a young broth culture of *Streptococcus scarlatinæ*. The strain of organism we have used is the Dick-Dochez strain from the National Collection of Type Cultures. After 18 to 24 hours' incubation there is added to each Roux bottle 5·0 c.cm. of carbol saline. It is possible by gently rolling this amount of carbol saline over the surface to collect as a dense suspension the whole floating growth from the surface of the agar. The total amount of fluid in the bottle is then removed by decantation. The pooled contents of a series of Roux bottles is then centrifuged at high speed, when the streptococci come down as a dense cake; while the supernatant fluid is passed through a Berkefeld filter, tested for sterility, and finally put up in suitable dilutions for the skin test. Specimens of toxin prepared in this way, which has the merit of simplicity, have been found to give good Dick reactions in dilutions of 1 in 2000 up to 1 in 30,000. In our experience toxin taken from Roux bottles incubated for longer periods does not reach such high titres, and we believe that it is in the short period of incubation that the efficacy of the method resides. Another advantage of toxin prepared in this manner consists in the fact that it but rarely gives rise to pseudo-reactions.

Precipitation of Toxin of Streptococcus Scarlatinæ.

The toxin of *Streptococcus scarlatinæ* can be precipitated out of condensation water preparations by means of alcohol.

Experiment I.

A condensation water toxin was tested out on a selected series of cases in dilutions of 1 in 5000 and 1 in 10,000. The results were as follows:—

	Positive.	Negative.
Toxin 1 in 5000—		
Non-scarlet	3	–
Scarlet	1	3
Toxin 1 in 10,000—		
Non-scarlet	2	3
Scarlet	–	5

Eight volumes of alcohol were then added to this toxin. The resulting precipitate was separated by centrifuging, re-dissolved in carbol saline, and made up to its original volume. The result of skin tests with dilutions of this toxin was as follows:—

	Positive.	Negative.
Toxin 1 in 4000—		
Non-scarlet	7	–
Scarlet	5	5
Toxin 1 in 5000—		
Non-scarlet	3	–
Scarlet	–	4
Toxin 1 in 10,000—		
Non-scarlet	1	4
Scarlet	–	5

These findings show that the toxin can be removed from solution by precipitation with alcohol, and also that the loss in toxin during the process of precipitation is probably only slight. A point of considerable interest, to which we will refer in another report, consisted in the fact that, of the scarlet fever cases giving a positive reaction, one was a case which relapsed on the twenty-eighth day of illness, one had myocarditis with multiple abscesses, and two had profuse nasal discharge.

Experiment II.

The same condensation water toxin as that used in Experiment I. was precipitated with four volumes of alcohol. After removal of this first precipitate the filtrate was re-precipitated by adding four more volumes of alcohol. Each precipitate was then made up in carbol saline to the original volume of the toxin and dilutions of 1 in 2000 were used for skin tests. The results were as follows:—

	Positive.	Negative.
Four-volume alcohol precipitate—		
Non-scarlet	2	1
Scarlet	–	4
Second alcohol precipitate—		
Non-scarlet	–	3
Scarlet	–	7

This experiment shows that the first precipitate contains toxin and that the second precipitate either contains no toxin or toxin in insufficient amounts to differentiate between scarlet and non-scarlet cases when used in the dilution indicated.

Experiment III.

A condensation water toxin was tested on a selected series of cases in two separate dilutions with the following results:—

	Positive.	Negative.
Toxin 1 in 2000—		
Non-scarlet	5	–
Scarlet	3	3
Toxin 1 in 4000—		
Non-scarlet	4	–
Scarlet	–	3

Two volumes of alcohol added to this toxin gave a heavy precipitate which was removed, the filtrate being re-precipitated with two more volumes of alcohol. The first and the second precipitates so obtained were dissolved in carbol saline and made up to the volume of the original toxin. Each, diluted 1 in 2000, was then tested on selected cases, the results being:—

	Positive.	Negative.
Two-volume alcohol precipitate—		
Non-scarlet	7	2
Scarlet	–	6
Second alcohol precipitate—		
Non-scarlet	2	2
Scarlet	–	5

These findings show that toxin is present in both precipitates. Further experience of this method has shown that more than half of the available toxin comes down with two volumes of alcohol, and that considerably less than half comes down with further addition of alcohol to four volumes. The two-volume alcohol precipitate is bulky, does not dissolve readily in carbol saline after drying, and shows a considerable amount of insoluble material. On the other hand,

the second precipitate taken after removal of the first dissolves very readily after drying and is easy to manipulate in concentrated solutions.

The actual amount of dried toxin which will give good differentiation of scarlet from non-scarlet cases varies with the character of the precipitate. Solutions of 2 to 5 mg. per 1000 c.cm. of carbol saline in the case of the two-volume alcohol precipitates and of the four-volume alcohol precipitates are sufficient for this differentiation, while solutions of 0·2 to 0·5 of a milligramme of the secondary precipitates in 1000 c.cm. of carbol saline produce a like result. The amount of dried toxin that is sufficient for a skin test dose consisting of 0·2 or 0·1 c.cm. of these solutions is therefore represented by 1/5000th and 1/10,000th of the figures we have quoted.

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THE DICK TEST IN SCARLET FEVER.

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AND

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THE small number of observations on the Dick test so far published in Europe encourages us to bring forward the following results. In July last, Okell and Baxter [1] reported the results of a number of tests. Ker, McCartney and McGarrity [2] (1925) have reported a further series. The present communication describes a further series of tests done on scarlet fever patients and on normal individuals.

The Toxin.

The toxin used in all these tests was prepared by us from a strain of streptococcus kindly sent to us by Dr. Dochez. It consisted of a filtrate of a 16-hour-old culture of the streptococcus in Douglas's [3] trypsin digest medium as modified by Hartley [4] and subsequently by Watson and Wallace.[5] An intradermal injection of 0·2 c.cm. of a 1/6000 dilution of the toxin was found to give a well-marked reaction 20 to 70 mm. in diameter in susceptible persons, the average positive reaction being about 20 × 30 mm. Dick toxin is much more heat stable than diphtheria toxin, and is practically unaffected by heating to 75° C. for ten minutes, a procedure which always inactivates dilutions of diphtheria toxin. The method employed for the inactivation of the toxin for the control inoculation is heating to 96° C. for 45 minutes. The constituent responsible for the pseudo reaction seems to be very little affected by this treatment. The toxin keeps for at least two weeks in the diluted state, and phenol (e.g., 0·4 per cent.) may be used as a preservative in the dilutions. Dick toxin, unlike diphtheria toxin, does not appear to produce tissue necrosis. Dick and Dick[6] and others report that many reacting doses can be given without causing any permanent tissue damage. In the dilutions employed in the test it appears to have a vaso-dilator effect on the capillaries. We have prepared toxins not only from Dochez's strain but from strains sent us by Dr. Dick of Chicago and Dr. W. H. Park of New York, as well as from two strains isolated in London by ourselves. All these toxigenic strains appeared to fall into one serological group by absorption tests, and produced toxins apparently identical in properties with that made from Dr. Dochez's strain. They were all neutralised by the serum of people who had recovered from scarlet fever and by the serum of Dick-negative individuals.

No animal other than man has been found to give satisfactory titrations of the toxin. The pig, guinea-pig, rat, mouse, cat, hen and rabbit are practically insusceptible. A toxin which when diluted 1/6000 and injected into susceptible human beings will give a well-marked specific reaction, fails to produce unequivocal reactions in these animals, even in the undiluted state. The monkey (*Macacus rhesus*) was also found insusceptible to the toxin. Kirkbride and Wheeler[7] (1924) have reported that the goat is susceptible to the toxin. We have found it difficult to decide how far the reactions in goats are to be ascribed to the specific scarlet fever toxin. Control fluids such as diluted broth, diluted serum, and heated toxin give rise to quite definite reactions, while the toxin reaction can be partially but not completely neutralised by convalescent serum. The interpretation of results is therefore difficult.

Antitoxin.—We have used toxin for the immunisation of two horses, and the serum obtained was found not only to neutralise an intradermic dose of the toxin in human beings but also, even when considerably diluted, to give rise to the typical Schultz-Charlton[8] blanching of the rash of scarlet fever patients. The therapeutic efficacy of this serum in the treatment of scarlet fever is at present being tested.

Technique of the Dick Reaction.

The technique of the injections is practically the same as that employed for the Schick test.

The skin in front of the forearms is carefully cleansed with spirit; 0·2 c.cm. of a suitably diluted toxin is injected intradermically into one arm, and 0·2 c.cm. of a similar dilution which has previously been heated to 96° C. for 45 minutes into the other.

Reading the Reactions.—Reactions are divided, as in the Schick test, into positive, pseudo-and-positive, negative, and pseudo-and-negative.

Positive Reaction.—The positive reaction develops in from six to 12 hours as a bright red flush with average dimensions of 20 by 30 mm. It has usually reached its maximum in 24 hours, and then rapidly fades away, so that it is usually almost invisible by the seventy-second hour after injection. The reaction thus develops much more quickly than the Schick reaction and fades away more quickly.

In the *pseudo-and-positive, or "combined" reaction*, there is a reaction on both arms, but that on the toxin arm is definitely greater than that on the control.

In the *negative reaction* there is no significant reaction on either arm.

In the *pseudo-and-negative reaction* the reactions, which may vary in size in different individuals, are approximately equal on both arms. The pseudo reaction, as in the Schick test, may remain for several days, and indeed may outlast the positive element of the reaction, a sequence never met with in the Schick test.

In the following series of tests we have also described a *partial positive* reaction by which we mean a small positive reaction a quarter to a half as large as the usual positive reaction, suggesting that a certain amount of the toxin has been neutralised. The significance of this type of reaction in terms of immunity is not yet clear, but as it is more common in those who have had scarlet fever than in those who have not, it possibly indicates that the patient is not susceptible to the disease.

Normal Group.

The normal group consisted of 100 medical students whom we obtained as volunteers through the kindness of Sir Frederick Andrewes. Ninety-five of these were available for reading at the end of 24 hours, the best time in our opinion for reading the tests. (Table I.) The positive rate, 74 per cent. in this

group is high. The Schick-positive rate we found in a similar group of medical students was 65 per cent. Twenty of the students had a previous history of scarlet fever, and of these 65 per cent. were read as positive and 35 per cent. as negative. In several of these the history of scarlet fever appeared somewhat indefinite. Seventy-five had a negative history of

TABLE I.—*Results of Dick Tests on 95 Medical Students.*

Reading.	Approximate percentage.	Reading.	Approximate percentage.
+	64	−	20
+*	0	−(?)	1
p+	8	−*	2
p+*	1	−*(?)	3
+(?)	1		
Percentage positive 74		Percentage negative 26	

Explanation of signs in Tables. + = Positive. +* = pseudo-and-positive. p+ = Partial positive. p+* = Pseudo-and-partial positive. − = Negative. −* = Pseudo-and-negative. (?) = A reaction difficult to interpret.

scarlet fever, and in this group there were 76 per cent. positive and 24 per cent. negative. The percentage of negative reactions is comparable to that obtained with the Schick test in similar individuals who gave no history of diphtheria.

In this series we noted the size of the reaction in relation to the history of scarlet fever. From previous observations on young children the opinion had been formed that the standard reaction with the test dose of toxin, in a completely non-immune individual, should be about 30 × 20 mm. Amongst the 70 students with postive reactions we found 36 in whom larger reactions developed, and in three the reactions measured upwards of 70 mm. in one axis. In all cases the area of redness rapidly disappeared. There were no definite pseudo reactions among the 36 individuals who had reactions larger than the normal. The size of the positive reaction appeared to have no relation to the history of scarlet fever. In a few cases only was the reaction greater in area at the end of 48 hours than at the end of 24 hours, and in no case did we read a reaction as definitely negative at the end of 24 hours but as positive at the end of 48 hours. In the whole series of normal individuals pseudo reactions were uncommon. Only one pseudo-and-partial-positive, and five pseudo-and-negative reactions occurred.

Convalescent Group.

The second group of individuals tested consisted of 120 cases of notified scarlet fever from the second to the twelfth week of convalescence. Table II. gives the results of the tests in relation to the period of convalescence.

TABLE II.—*Analysis of Results of Dick Tests in Relation to Period of Convalescence (120 Cases).*

Week.	Positive group. (22 or 18 per cent.)				Negative group. (98 or 82 per cent.)			Totals.
	+	+*	p+	p+*	−	−*	−(?)	
1st	..	..	..	..	..	..	..	..
2nd	..	..	..	..	1	..	..	1
3rd	2	..	2	..	19	1	..	24
4th	4	..	1	1	18	2	..	26
5th	..	..	..	..	9	..	2	11
6th	3	1	2	2	19	..	1	28
7th	1	..	1	..	14	1	1	18
8th	..	..	..	..	2	..	1	3
9th	1	..	..	..	..	..	..	1
10th	..	..	..	..	3	..	..	3
11th	..	..	..	..	2	..	1	3
12th	1	..	..	..	1	..	..	2
Totals	12	1	6	3	88	4	6	120

The net results of the tests on scarlet fever convalescents from the second week of convalescence onwards were as follows: Positive group 18 per cent., negative group 82 per cent., the partially positive group amounted to 7·5 per cent. Table III. gives a further analysis of the positive group.

TABLE III.—*Further Analysis of Positive Group in Table II. in Relation to Clinical Diagnosis of Scarlet Fever (22 Cases).*

Clin. diag. of scarlet fever.	Number tested.	Result of Dick test.	Clin. diag. of scarlet fever.	Number tested.	Result of Dick test.
Definite ..	14	+ 5	Doubtful	5	+ 4
		+* 1			p+ 1
		p+ 5	Very		
		p+* 3	doubtful	3	+ 3

Of the 22 read in the positive group 14 had a very definite clinical history of scarlet fever and the remainder were considered from their history and continuous observation during their convalescence to be of "doubtful" character. Of the 14 with a definite history of scarlet fever six only gave strongly positive reactions, one of these being a strong positive and pseudo reaction. The remaining eight gave partial positive reactions. In the case of the six strongly positive cases, the intervals after the alleged onset of the disease were 4, 5, 5, 6, 6, and 7 weeks respectively. One of the strongly positive patients with a history of a very definite attack developed a typical attack of scarlet fever the day after the test had been read. This case illustrates the possible value of the test in investigating the confused subject of relapses in scarlet fever.

As it is generally admitted that the diagnosis of scarlet fever is much more difficult in very young children, an analysis of the reactions was made in reference to age-groups. The numbers of the children under four years old were too small to enable us to draw any definite conclusion from them, but there was some indication that positive reactions were relatively more common in this group. Pseudo reactions, either positive or negative, were unexpectedly uncommon in the group of convalescents. From previous work it seemed that pseudo reactions are more common during the more acute stages of the disease.

Hospital Staff Results.—Thirteen members of the medical and nursing staffs of scarlet fever wards were also tested. All but one nurse had spent a considerable time attending scarlet fever cases, and seven had suffered from definite attacks of scarlet fever. This nurse had been in the wards only a fortnight, and was the only one to give a positive reaction. Nine days after the test she developed a typical attack of scarlet fever.

Discussion of Results.

In both groups it will be seen that an individual with a history of scarlet fever does not necessarily give a negative reaction, even though several weeks have elapsed from the onset of the attack. The normal group with a history of scarlet fever had a Dick-positive rate of 65 per cent. and the convalescent group 18 per cent. The Dick-positive rate in the normal group with a scarlet fever history was therefore undoubtedly high. Two explanations of this unexpected finding are suggested. Either the history given by the individual himself was unreliable, or the immunity to the toxin had disappeared with the lapse of time. It seems, however, reasonably certain that the risk of scarlet fever, to those with a definite history of the disease, is small, and on these results the possibility of individuals being Dick-positive, yet insusceptible to the disease, cannot be excluded.

A similar difficulty occurs in interpreting the results in the convalescent group, where there was a Dick-positive rate of 18 per cent. Four explanations of this discrepancy appear possible: (*a*) That the present methods of diagnosis are not wholly satisfactory; (*b*) that patients who have had scarlet fever do not

necessarily become immune to the toxin or become so, in some cases, very slowly; (*c*) that strains of scarlet fever streptococcus may produce more than one toxin; (*d*) that the test is not a true indication of susceptibility to scarlet fever.

With regard to (*a*) it is unnecessary to emphasise the difficulties in making a certain diagnosis of scarlet fever, as indeed it must be for all diseases where the specific cause is still uncertain. (*b*) This seems to be a very probable explanation of at least some of the discrepancies since few diseases will invariably produce immunity, or at least sufficient immunity to neutralise a dose of injected toxin. (*c*) Up to the present there appears to be no evidence that there is more than one scarlet fever toxin. (*d*) The results of the tests, both in the large series done in America and the smaller series done in this country by Ker and by ourselves, are in the main uniformly in favour of the test, and it does not appear too sanguine to consider the comparatively small percentage of discrepancies as due to the inevitable ignorance of the occasional factors governing the test.

It is possible that with the further development of knowledge the standpoint will change, and the bacteriological findings become of real value in diagnosis. For the moment the laboratory worker must accept the opinion of the experienced clinician rather than suggest any readjustment of the diagnosis by an appeal to a test which is still in the experimental stage.

Conclusions.

1. Amongst 95 medical students 74 per cent. gave positive response to the Dick test. Amongst 20, who had a history of scarlet fever, 65 per cent. gave a positive reaction; of 75 students who had no history of scarlet fever 24 per cent. were negative to the Dick test.

2. Amongst 120 patients entered in the hospital records as convalescent from scarlet fever, 82 per cent. gave a negative reaction; amongst the 22 (18 per cent.) with a positive reaction there were 6 giving a strongly positive reaction, who were considered to have had a definite attack of scarlet fever.

3. On the whole, our experience of the test agrees with that of Dick, Zingher,[9] [10] and others.

Tests by Other Observers.

1. Dr. E. H. R. Harries, in conjunction with Dr. James Chalmers, made some tests at the City Hospital, Little Bromwich, Birmingham, in 1924, with toxin which we prepared from the Dochez strain. Dr. Harries has allowed us briefly to quote some of these results, which were as follows:—

Of 11 children suffering from diphtheria, without previous history of scarlet fever, eight gave a positive response to the Dick tests: one a pseudo-and-positive; and two a pseudo-and-negative reaction.

Of nine children tested during convalescence from scarlet fever, all gave a negative response. Another child who had been notified as suffering from scarlet fever but who gave no definite evidence of the disease and was "barrier nursed" throughout, showed a positive reaction.

Some members of the nursing staff were also tested with this toxin. Of 42 nurses so tested, 16 gave a history of scarlet fever. Twenty-eight showed a negative reaction, and nine a pseudo-and-negative, whilst only four gave a positive or slightly positive response, and one a pseudo-and-positive reaction.

Two of the four positive results were obtained in nurses who stated that they had had scarlet fever. Both these attacks were said to have occurred in hospital, and it was therefore possible to investigate them. In both instances the attack was of a very doubtful nature.

It is to be noted that in all the above tests 0·1 c.cm. of the toxin and of control was employed.

Dr. Harries and Dr. Chalmers also, before deciding to use therapeutically horse serum which we had prepared by immunisation with toxin from the Dochez streptococcus, tested the serum for the production of the blanching reaction. They found that the horse sera used, either neat or diluted from 1-10 to 1-100, gave a typical Schultz-Charlton blanching of the rash in every case of scarlet fever tested, but failed to blanch an enema rash, a rash associated with encephalitis, or a toxæmic rash due to constipation. Normal horse sera used for controls failed to produce blanching in any instance.

2. Dr. F. Foord Caiger arranged for the carrying out of some Schultz-Charlton tests by Dr. Ruby Inkster at the South-Western Hospital. Dr. Inkster has very kindly supplied us with a preliminary record of some of her work.

Serum obtained during convalescence after a typical attack of scarlet fever gave a positive Schultz-Charlton blanching when tested on the rashes of three patients suffering from scarlet fever. Various samples of normal horse sera were tested in 20 instances, but in all cases failed to blanch the rash. Serum from horses we had immunised with toxin made from a strain of the specific streptococcus was tested on the rashes of 43 patients. Serum A, when used either neat or in various dilutions up to 1 in 100, produced blanching in every instance (30 cases); serum B, tested in 13 cases, produced blanching in nine, in dilutions up to 1 in 10. Therapeutic serum which had been used in America, and which we owe to the courtesy of Dr. Dochez, gave positive blanching results in all ten cases tested, the serum being diluted 1 in 5 or 1 in 10, and some therapeutic serum which Dr. W. Park, of New York, very kindly sent us produced blanching in three out of five cases.

The figures are too small to allow of a comparison of the "blanching titre" of the various sera used, but as far as can be judged from this series of tests it would appear that the sera we have prepared possess the specific antitoxin in reasonable concentration.

We owe our thanks to Dr. R. A. O'Brien, Dr. Foord Caiger, Dr. Howell Griffiths, Dr. Harries, and Dr. Ruby Inkster for the help they have given to us in this work.

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THE EXPERIMENTAL PRODUCTION OF CANCER

BY ONE APPLICATION OF TAR.

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OF the many explanations which have been given of the genesis of cancer the only one which, up to the present, has been confirmed by experimental results is the theory of Virchow in regard to the rôle of chronic irritation. All the carcinogenic agents now known—tar, soot, arsenic, X rays, radium, *Spiroptera* or *Tænia crassicollis*—depend on the fact that their continued application gives rise to irritation of a chronic character. Even in the case of tar, it is necessary to continue its application to the skin of a mouse for at least four months before an epithelioma is produced. Nevertheless, despite the importance

of the chronicity of the irritation, there is not wanting evidence to suggest that under certain conditions the single application of a carcinogenic agent may give rise to cancer. Evidence in support of this view is partly clinical, partly experimental.

Clinical Records.

Story (1885)[1] cites the case of a carbolic worker who received a splash of crude carbolic on the conjunctival surface of the left lower eyelid. Four months later an epithelioma was removed at operation from the area which had been touched by the carbolic. The diagnosis was confirmed by microscopical examination.

Bang (1923)[2] records the case of a tar worker who while opening the door of a retort was splashed by a bead of hot tar, which fell on the skin just within the left nostril. Sixteen days later an epithelioma the size of a coffee bean was removed at operation from the area which had undergone the trauma.

In both these cases the single application of an irritant was followed by the occurrence of a carcinoma. It is probable that records of similar cases, though by no means common, are to be found in the literature.

There are, of course, many cases where injury to a limb is followed sooner or later by the recognition of a malignant growth, usually a sarcoma, at the site of injury. The difficult question always arises, however, as to whether the trauma has not simply served to draw attention to a previously existing neoplasm. In the two cases here cited this difficulty does not arise. It may, however, be objected that both patients had worked for some years with carcinogenic agents. It is possible, though not probable, that the areas on which the epitheliomata developed may have been subjected to prolonged irritation.

Experimental Results.

To obviate this criticism it was determined to try the effect of a single application of hot tar to the skin of mice. The following experiments were therefore carried out:—

Feb. 29th, 1924: Fifty mice received one application of a chloroform extract of tar heated to a temperature of 70° C. on the depilated skin of the back.

April 11th: Twenty-five mice received one application of the same tar heated to 70° C., the tar being applied to three small areas forming the apices of a triangle on the back of the mice.

Feb. 4th, 1925: Thirteen mice were still alive. Two mice from the first and one from the second series had developed epitheliomata on the skin of the back. The three tumours exhibited continuous growth, and in their naked-eye and microscopic appearances resembled in every way the epitheliomata produced by the long-continued application of tar.

These experimental results serve, therefore, to confirm the clinical cases previously cited by showing that the action of carcinogenic agents on the cell is mediate rather than immediate. By the law of probability it is far more difficult to obtain a given result by a single attempt than by repeated attempts. As, however, our knowledge of the essential cell changes involved in cancer development becomes more advanced it should be possible to produce cancer invariably by a single intervention.

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FINANCES OF UNIVERSITY COLLEGE HOSPITAL.—Last year's accounts of this hospital show a deficit of £11,500, which brings the total deficit for the last six years up to £45,000.

ROYAL HALIFAX INFIRMARY.—A new maternity ward at the Halifax Infirmary was opened recently by Princess Mary, Viscountess Lascelles. The ward, named the Linford Moore Kitchenman Maternity Ward, has been erected as the result of a legacy of £5000 by the late Mr. Charles Kitchenman of Halifax, and other donations include £2000 from Mr. Frank Lee, President of the infirmary, and £1000 each from Sir William Bulmer and Sir Harold Mackintosh. The ward will accommodate 20 patients.

Medical Societies.

HARVEIAN SOCIETY OF LONDON.

A MEETING of this Society was held on March 27th, Sir JOHN BROADBENT, the President, being in the chair.

Sir CRISP ENGLISH opened a discussion on

OBSTRUCTION OF THE COLON.

He said that the subject was one which teemed with difficulties and the results of treatment were at present deplorable, having an operative mortality of 30–40 per cent. Excluding, for the purpose of this discussion, intussusception, external herniæ, and intestinal stasis, the remaining cases of obstruction were due in 80 or 90 per cent. of cases to malignant disease, 85 per cent. were on the left side and 50 per cent. in the pelvic colon; 35 per cent. of the cases were acute.

Diagnosis.

The diagnosis must rest on a careful study of early symptoms, which were often so slight that they failed to impress the doctor. There was little hope of improvement until the profession had learned the doctrine of early diagnosis, but to endeavour to teach it to the public would only result in a great increase of neurasthenia. The problem was essentially a suitable one for treatment by modern clinical methods, calling for every type of investigation available. The experienced observer was able to detect a characteristic facial aspect in the patient, or attention might be drawn to the case by the appearance, for the first time, of abdominal discomfort and constipation in elderly subjects. Often there was very little pain, but some localised borborygmi were noticed and a feeling of trickling in the neighbourhood of the growth. But there was no symptomatology of carcinoma of the colon until the onset of some degree of obstruction. The keynote to this was the distension and hardness of the cæcum. Diagnosis and localisation must rest to a large extent on the X ray findings, which should be based on a barium enema, supplemented by a barium meal and observations under the screen as well as photographs. Frequently barium meals and enemata were much too bulky, producing an exaggerated and distorted picture or a confusing mass of shadow. Sometimes an enema would pass right through a carcinoma, and radiological evidence must be taken in conjunction with the clinical signs and symptoms. Gas in the colon would at times serve to show the site of a partial obstruction without the presence of any opaque substance. Sigmoidoscope examination was also helpful.

The present high mortality might be attributed to three factors: (1) Delay, whereby the patient came to operation in a condition of profound toxæmia. (2) Attempting too much; there was often confusion between relief and removal of the cause. In acute cases relief only must be considered and cure postponed. (3) Anæsthetic. As much as possible should be done under local or spinal anæsthesia. A heavy general anæsthetic greatly reduced the patient's chances in an acute case.

The only practicable operation in desperately toxæmic cases was a *blind cæcostomy*, and this was the measure of election in all acute cases unless there were some definite indication for a colotomy. It had the advantages of being rapid and could be done under local anæsthesia with a small incision. It was fatal to allow distended coils of intestine to get outside the abdomen as they could never be replaced. Exploratory laparotomy should only be performed when there was no appreciable distension. If the pulse were more than 140 it was futile to operate at all. Whatever operation was undertaken, it was advisable to do a cæcostomy as a temporary measure

in addition. Colotomy was good in suitable cases and Murphy's button often relieved the discomfort of the first few days, being better than a Paul's tube. Appendicostomy was useless, as the drainage was uncertain and ineffectual. Paul's operation still had its advocates, but as it was only suitable for small growths in the pelvic colon it should be replaced by excision.

Discussion.

Mr. T. P. LEGG doubted whether cæcostomy were always the right treatment; it did not allow for such causes of obstruction as volvulus. He doubted whether it were worth operating at all if the patient were so ill as to need a cæcostomy; where there was a reasonable chance of the patient doing well it was better to open the abdomen and find out what condition was present, either with a view to future operation or to immediate excision or short-circuit. He questioned whether the drainage was as perfect through the cæcostomy as was believed; at subsequent operation the ascending and transverse colon were often found inflamed and distended with liquid fæces. The best anæsthetic was the lumbar. Tuberculosis of the ileo-cæcal valve simulated carcinoma very closely and might cause obstruction. In a case under his care the lump felt before operation soon disappeared after the obstruction had been relieved, but the patient subsequently developed phthisis; he asked whether it were a fact that individuals with tuberculosis of the ileo-cæcal valve were particularly liable to virulent phthisis. He also asked whether the annular carcinomata were really as innocent as was stated; if so, the best treatment would seem to be simple drainage. Another type of case to which he desired to call attention was that of pure spasm, which often occurred in the region of the splenic flexure. There were no further symptoms after the obstruction had been relieved by colostomy.

Mr. MONTAGUE SMITH spoke of the difficulty of diagnosis from the point of view of the general practitioner, and quoted two cases which had come under his care. One was a man of 66 who had a hard tumour in the cæcum which increased in size while under observation. A diagnosis of malignant growth, possibly retroperitoneal, was made, but the passage of a catheter resulted in the withdrawal of large quantities of urine and the collapse of the tumour. In another case there was epigastric swelling, but the physician called in was of the opinion that it was not carcinomatous and ordered horse-riding and massage. Shortly afterwards the patient vomited pints of foul fæculent material, the massage having burst a growth connecting transverse colon and stomach. Mr. Smith had found paraffin a disappointing remedy, while the administration of small doses of calomel over long periods, in cases where there was obstruction, was dangerous, as it might be retained and produce mercurial poisoning.

Mr. G. A. EWART spoke of the difficulty of diagnosing between obstruction and general peritonitis in elderly people, who did not show the characteristic constitutional signs of pus in the abdomen. He did not believe in blind cæcostomy. No case should be left so long as to be unfit for exploration. He did not approve of attempting any anastomotic procedure at the time of operating for acute obstruction; every case should be allowed to recover from the toxæmia, and the stitching, when done, should be good enough to be relied upon without the insertion of a tube, which invariably resulted in a fæcal fistula. He believed that every case of volvulus sooner or later required resection of the sigmoid. If cæcostomy were done in a case of acute obstruction at least three weeks must be allowed to elapse before any further operation.

Sir JOHN BROADBENT quoted three cases illustrating the extraordinarily protean character of this condition. One case was treated as rheumatoid arthritis and there was never any evidence of obstruction; the patient died of carcinomatosis of the peritoneum. The second was a case of heart disease; on examination some distension of the colon and visible peristalsis led to a diagnosis of carcinoma of the sigmoid. X ray examination revealed no obstruction, but manifested a caseating tuberculous kidney. At operation a large infiltrating growth of the sigmoid was found. The third case was diagnosed as appendicitis with concretions; at operation the "concretions" proved to be malignant glands secondary to a large growth in the cæcum. The patient completely recovered after a short-circuit had been performed, but died three and a half years later from secondaries in the ribs and other bones.

Mr. IVOR BACK spoke of that form of *diverticulitis* which follows from chronic septic and fibrotic invasion of the colon producing a solid sausage-shaped mass resembling a carcinoma. The condition was comparatively common in proportion to other diseases of the colon. The differential diagnosis between the two conditions was extremely difficult, even at operation. In his experience there was a very frequent history of some urinary involvement in diverticulitis, even fæcal fistulæ, and in this condition the characteristic string-like constriction of the carcinomatous bowel was seldom found. He asked what was the correct procedure when the diagnosis of diverticulitis had been made; in the Mayo Clinic the mortality associated with excision and anastomosis was 18 per cent., while that of colotomy was nil; moreover, the tumours very often disappeared completely after colotomy. With regard to the blind cæcostomy, cases must be divided. Where a laparotomy could be borne by the patient it was better to do it and obtain as much information as possible, but the operation of blind cæcostomy was justified in cases with a pulse of 120 and much distension. Anastomosis in a state of toxæmia was useless as the streptococci behind the obstruction destroyed the ligatures, producing peritonitis.

Dr. H. C. H. BALL agreed that diverticulitis was commoner than was supposed; it was to be diagnosed by the presence of other diverticula and by the presence of spasm in association with obstruction.

Mr. G. DE BEC TURTLE pointed out that obstruction of the colon might be due to dilatation at the extremes of life without any pathological changes to account for it. Spasm occurred chiefly in middle life and in females and those who take purgatives constantly. Such cases were very difficult and could only be diagnosed by careful radiography or by catching the colon in a condition of spasm. Often they were set up by some irritation low down in the bowel producing idiopathic dilatation and so leading to a pseudo-obstruction.

Dr. J. BLOMFIELD said that if a patient could stand an operation at all he could stand a general anæsthetic if properly given. The great factor was the length of time taken. The difficulty of returning coils of distended intestine to the abdominal cavity involved very complete relaxation; surgeons were apt to forget that a stimulus might be so violent that no amount of anæsthetic would prevent its getting through.

Dr. J. MORTON said that what first should raise the suspicion of the practitioner was an early loss of appetite with changes in the secretion of the mouth, such as dry-coated tongue. It seemed that when the cæcum got into difficulties the stomach always tried to do as little work as possible. Secondly, the alteration of the patient's reaction to aperients; either the customary pill failed to act or else upset him far more than before. There might also be loss of flesh, hæmorrhage ascribed to piles, also the borborygmi and trickling as previously described. Paraffin in his experience was dangerous in that it might lull to a false security by causing total disappearance of symptoms until the sudden onset of acute obstruction.

Dr. G. ORME emphasised the difficulties of diagnosis; a very large proportion of the cases operated on for acute obstruction had had no previous symptoms at all. He also had found that patients noticed an inefficiency in their usual aperient, while a stronger

dose of it was liable to lead to griping pains in the lower abdomen which had never before been experienced.

Reply.

Sir CRISP ENGLISH, in replying, said that the great need was to find some way of reducing the mortality under present methods. It was to this end that he had adopted cæcostomy. Volvulus occurred in 1·5 per cent. of cases only, and if the 1·5 per cent. were catered for by exploration there would be a loss of some 10 or 20 per cent. of other types of case. He thought that anastomoses should be drained although it did produce fæcal fistula; better a live patient with a fistula than a dead one without.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES.

GONOCOCCAL AND SYPHILITIC AFFECTIONS OF THE EYE.

A MEETING of this Society was held on March 27th, Colonel L. W. HARRISON, the President, being in the chair. The evening was devoted to a discussion on the above subject.

Syphilitic Eye Conditions.

Mr. N. BISHOP HARMAN dealt with the eye conditions due to syphilis, and, owing to the varied extent of these eye affections due to that disease, he said he would take, as his main thesis, syphilis as a cause of blindness, blindness being the bill of mortality of that important organ. He would be able to show, he said, that syphilis was accountable for more blindness than was any other single infection or degeneration of the eyes. The material on which this contribution was based came from three sources: (1) A well-known home for blind babies; (2) several schools for the blind established by the London County Council; and (3) cases from his private practice, a total of well over 5000.

Mr. Harman had examined 200 blind infants, mostly at about a year old. When admitted to the home they remained there until their fifth year, and were then transferred to other blind schools. In these infants there were three causes of blindness: Surface inflammations, inflammations within the eyeball, and congenital defects. More than half these cases belonged to the first group, ophthalmia neonatorum being the chief contributor—49 per cent. of the cases; purulent conjunctivitis due to acute infectious diseases yielding 8 per cent. In the second group the prime cause seemed to be congenital syphilis. The third group embraced congenital defects of the eyes, mostly due to lack of development or to a pathological arrest of development, some of them syphilitic. At least 60 per cent. of these babies owed their blindness to parental venereal disease (50 per cent. from gonorrhœa, 10 per cent. from syphilis).

Blind School-Children.

The school-children examined by Mr. Harman numbered 3300, and he had classified them for two special purposes, with an interval of seven years between—namely, for submission to the Royal Commission on Venereal Diseases, and to the Departmental Committee on the Causes and Prevention of Blindness. More than half the infants were blinded by ophthalmia neonatorum. With regard to the surface inflammations, 699 of the children were blinded in this way. Total blindness was caused by ophthalmia neonatorum in 369, purulent conjunctivitis of later years in 90, and phlyctenular keratitis in 242. Children blinded by inflammation in the front half of the eye numbered 413, chiefly due to interstitial keratitis, an effect of congenital syphilis. Iritis and irido-cyclitis accounted for 14, syphilis being responsible for all but two of them. Of 242 cases of disseminated choroiditis, 210 were certainly attributable to congenital syphilis. Summarised, the figures showed that venereal disease in parents accounted for more than half the blindness found amongst school-children—i.e., children between 7 and 16 years of age.

Patients of All Ages.

Dealing next with the third source of his material, private practice, he said that of 5000 cases he had examined, of all ages, 925 were blind in one eye or in both, while 603 were partly blind on one or both sides. Ophthalmia neonatorum accounted in this group for only 17, and only one adult had gonorrhœal ophthalmia. At all ages, including the young and the very old, blindness from venereal disease was about 14 per cent. of the whole—i.e., 2·5 per cent. from gonorrhœa and the rest from syphilis. Viewing the matter from another angle, that of the results of measures taken to reduce blindness and other sequelæ of venereal disease, he gave the number of blind children per 100,000 school-children in 1907 to 1913, and again in the years 1914 to 1920. In the former period the percentage of ophthalmia neonatorum was 18·3, that of congenital syphilis 46·8. The comparative figures for the later years were 12·5 and 40·2 respectively, showing 6 per cent. reduction in each class.

He next dealt with the clinical signs of syphilis, remarking that in school work the diagnosis of congenital syphilis must rest largely on associated symptoms. In 190 cases of interstitial keratitis due to congenital syphilis he found Hutchinsonian teeth were present in 129, the characteristic physiognomy in 73, iritis in 77, disseminated choroiditis in 30, and 72 had a bad family history. Of 51 cases with disseminated choroiditis, 22 became insane, 18 were mentally deficient, 2 were microcephalic idiots, and 9 epileptic.

Mr. Harman proceeded to deal with the serious effects of syphilis on the results of pregnancy, and his remarks led up to his exhibition of the following instructive table:—

—	Healthy children.	Miscarriages.	Still-born.	Infant deaths.	Diseased with syphilis.
Syphilitic ..	399	92	80	229	210
"Average" ..	791·7	73·8	20·5	113·8	—

Syphilitic mothers had 17 per cent. more pregnancies than did "average" mothers, probably because of the frequency of miscarriages among them.

In conclusion, he expressed his appreciation of the earnest work which was now being carried on in the V.D. clinics of the country, and said that eye and other specialists looked hopefully to the workers in those centres for a substantial reduction of these tragedies of life.

Gonorrhœal Affections of the Eye.

This part of the subject was dealt with by Mr. CYRIL HUDSON. He considered the infections under the headings of exogenous and endogenous, and said that gonococcal infection of the conjunctiva might occur not only before birth, but before rupture of the membranes took place. The nurses controlled by the Central Midwives Board were not allowed to use more elaborate measures for preventing ophthalmia neonatorum than wiping the eyes of the infant free from all moisture as soon as the head was born. Credé, by wiping the eyes with clean linen and ordinary water, and then allowing a drop of 2 per cent. silver nitrate to fall off a glass rod into the eye, reduced his cases of this condition from 10 per cent. to under 0·5 per cent. But the time of greatest danger to the eyes of these infants was immediately after rather than during birth, as there was then risk of infection of the eyes from the baby's hands before they were washed, and from the bath water entering the eyes, and precautions must be taken accordingly.

Corneal complications were specially likely to occur in weakly babies, congenital syphilitics, and those born prematurely. The lesions of the cornea ranged from infiltration without loss of substance to ulceration leading to destruction of almost the whole of the cornea. The disease might be complicated by arthritis, endocarditis, or septicæmia. The blindness following corneal ulceration might lead to disorganisation of the eye or secondary glaucoma, but the latter might sometimes be obviated by a timely operation. Care should be taken when examining cases in which the lids were glued together by purulent ophthalmia, as the reservoir of pus might be injected into the eye of the observer when he separated the lids. To prevent this, a lotion should first be applied, on cotton-wool, and a further reason for the use of gentleness was to avoid rupture of a delicate cornea.

With regard to *treatment*, Mr. Hudson said bad results were sometimes due to over-treatment in the form of the application of strong irritating solutions, such as perchloride of mercury. If the latter were used, its strength should not exceed 1 in 20,000. Some text-books advised the use of lotions stronger than he thought desirable. He considered that Mr. Mayou's method of treatment was very good. It consisted of 1 in 6 of eusol for washing away the conjunctival discharge, followed by the instillation of flavine 1 in 1500 in castor oil. This could be renewed every three or four hours. Mayou did not find ordinary or detoxicated vaccines of any value in these cases. He thought both the mother and father of these children should be treated. If treatment of the child were carried out in the home the injunctions in regard to precautions against spread of the disease could not be too emphatic. In adults gonorrhœal conjunctivitis was comparatively rare. Livingstone had reported remarkable success from the subcutaneous injection of colloid manganese, and good results were said to have followed milk injections, while Allison's success with typhoid vaccine in these cases was quite marked.

Endogenous gonorrhœal inflammations of the eyes were seen as conjunctivitis and irido-cyclitis. The latter might occur within a fortnight of the initial gonorrhœal infection. Often it was bilateral. In gonorrhœal iritis he had frequently seen blood in the anterior chamber. In doubtful cases it was not wise, in making a diagnosis, to use atropine, as it might precipitate a threatening glaucoma. In these doubtful cases it was better to instil a little cocaine; 2 per cent. cocaine and 2 per cent. atropine ointment placed between the lids was useful for the relief of pain.

Dr. T. H. C. BENIANS spoke from the pathologist's point of view. He said that though the bacteriological diagnosis of gonococcal infections of the eye was not difficult, neither was it very certain, especially in chronic cases. In doubtful cases a positive result could be obtained from an investigation of the vesiculæ seminales. Dealing with superficial infections of the eye with the gonococcus, he said it was an unstable coccus; it did not itself excrete a toxin, but when it was broken down it produced a protoplasmic substance which was deleterious and disharmonious with the human being. Yet it rapidly took root in certain parts of the body and caused virulent symptoms where other organisms would not secure a footing. The seats of trouble were usually those where there was a comparative stasis; and within a few hours of the toxin having touched unprotected nerve-endings there was a violent reaction in the blood-vessels of the part. Instead, therefore, of being obsessed by the thought that a coccus was present, the effort of the doctor should be to alter the nidus in which the gonococcus was flourishing to one in which it would be far from happy.

A discussion ensued, in which the PRESIDENT, Dr. D. NABARRO, Dr. FOWLER WARD, Dr. MARGARET RORKE, Dr. MILLS, and Dr. SHARPE took part. Mr. BISHOP HARMAN, Mr. HUDSON, and Dr. BENIANS briefly replied.

Reviews and Notices of Books.

MODERN OPERATIVE SURGERY.

Edited by H. W. CARSON, F.R.C.S. London: Cassell and Co. 1924. In two vols. Pp. 1568. £3 3s.

THE field of surgery has become so vast, and the operations which are now included in its scope are so many and so varied, that it is impossible for one man to make himself master of the whole subject. In these volumes a successful attempt has been made to grapple with the problem of supplying minutely detailed descriptions of all operations by those accustomed to perform them, and the result is a work on operative surgery on entirely new lines. It is divided up into a large number of articles for each of which an acknowledged expert in that particular subject is responsible, and though each of the authors sees surgery from his own point of view, a most striking feature of the book is the unity of the whole. The stern hand of the editor must have exercised the most rigid compression, for nothing else could have kept these volumes down to a reasonable size, but he has used his powers with great judgment. Out-of-date methods have been ruthlessly rejected, whatever their historic interest, but a full description is given of all those methods which would be accepted as sound to-day by experienced surgeons.

All the articles are good; some are outstanding. For example, in the first volume considerable space is devoted to operations on the locomotory system, and nothing could better show the breadth of outlook which pervades the book than the first article of this series, written by Sir Henry Gauvain, on surgical tuberculosis. The inclusion of sunlight and bathing as methods of treatment in a work on operative surgery is unusual, but is certainly justifiable. The methods of orthopædic surgery are dealt with in a series of articles by Mr. R. C. Elmslie and Mr. Jenner Verrall. The section on amputations is especially valuable, since in a few pages is compressed all that the student need know and, indeed, all that most surgeons will ever require to derive from a book. The experiences of the war have largely altered our views on amputations, but it is still true that no class of operation requires a more perfect and exact technique. Mr. Hey Groves contributes an important paper on fracture operations. There is no more difficult branch of surgery than that which concerns the bones, and his clear descriptions are valuable. In his article on the nerves Mr. H. Platt has gathered into a short space all that the war taught us on this difficult subject. Mr. Richard Warren, in his article on the thorax, covers with extraordinary brevity a subject the importance and possibilities of which are only now being realised. Mr. A. J. Walton deals adequately with operations on the spinal cord and also contributes an important article on the surgery of the thyroid gland. His description of technique will be appreciated and his cautions as to the preparation and management of these cases should be carefully studied. Mr. Sampson Handley contributes two remarkable articles on the treatment of malignant disease of the breast. We have read no sounder exposition of the modern views of cancer, the foundations of which rest in many places on his own researches. Mr. Grey Turner's article on the liver and biliary system is

(*Continued from previous column.*)

ERRATUM.—In THE LANCET of March 28th, p. 661, the classification of radiation therapy as adopted by Dr. Douglas Webster should be read as follows: Superficial (100,000 volts and under), medium (100–150,000 volts), and really deep therapy (150,000 volts and over). Dr. Webster further stated that "cases of breast carcinoma were best treated prophylactically by medium deep therapy, with 3 mm. of aluminium *or* 0·2 zinc," not "*and*" as reported.

exhaustive. The procedures which the surgeon may be called upon to perform in this difficult region are complicated, but admirable illustrations illuminate the section, and even a student should have no difficulty in following the descriptions. Operations on the skull and brain are dealt with by Mr. Bathe Rawling with sound common sense. Particularly good are the pages he devotes to gunshot wounds of the skull. The actual technique of the operations he describes could, as he says, be carried out by any experienced surgeon, though we hardly agree that they can safely be undertaken by a surgeon who has not special experience of such work. Indeed, so difficult are the decisions which have to be made at the operating table that some hold the view that removal of a cerebral tumour should only be attempted in the presence of at least two first-class opinions in consultation at the actual operation. Mr. Gillies deals with plastic surgery, supplying an inspiring epitome of the subject from the most modern standpoint. The article teems with new and practical ideas, and the author might in some places, we think, justly have claimed personal credit to which he lays no claim.

To Mr. Carson, the editor, falls the task of dealing with abdominal operations, and he performs it in a series of admirable articles. The task of selecting a series of representative operations must have presented great difficulties. The successful compression of these into so small a space without the loss of any important detail is a great feat. In the article on gastric ulcers the orthodox practice of the present day is explained, described, and illustrated with great clearness. It is refreshing to read an article on this subject in which the author does not lose himself in a maze of alternative methods, but describes a selected group of operations with the detail they deserve. Sir John Thomson-Walker and Mr. John Everidge are responsible for the articles on genito-urinary surgery. Many new methods are described, and the sections are well up to the high standard of the book.

A series of articles on special subjects forms a very valuable addition to the work, being a recognition that many surgeons have to undertake a much wider range of surgery than specialists in great centres are called upon to consider. These sections are sufficiently advanced to appeal to the specialist, while clear enough to help the general surgeon called on to do an operation well outside his usual range. The short space devoted to anæsthetics is taken up by Dr. J. Blomfield with a sound account of the methods of general anæsthesia, full of valuable hints. Only two-thirds of a page is devoted to local anæsthesia; it is likely that this space will have to be largely increased in a future edition, for infiltration anæsthesia will surely hold an important place in the future of surgery.

This work may be taken as representative of the established practice of English surgery at the present day. Its production is a really fine achievement.

CLINICAL RESEARCHES IN ACUTE ABDOMINAL DISEASE. By ZACHARY COPE, B.A., M.D., M.S. Lond., F.R.C.S. Eng., Senior Surgeon to Out-patients, St. Mary's Hospital, Paddington; Senior Surgeon to the Bolingbroke Hospital, Wandsworth Common. London: Oxford University Press. 1925. Pp. 148. 12*s.* 6*d.*

IN this volume the author has collected together a series of articles which he has contributed from time to time to various journals. They all centre round his own clinical observations, and it is a feature of these observations that they have been made without instrumental or laboratory aid of any kind. The book is, in fact, a protest against the undue stress apt to be laid at the present time on complicated methods of laboratory technique, and a plea for a return to the simple and direct observations upon which our fathers had to depend for diagnosis, and in which they developed such amazing skill. Practically every chapter discusses from some point of view the interpretation of pain as a symptom of disease, and none will dispute the clinical importance of this aspect of medicine. In addition to collating the observations of Head, Sherren, and many others, Mr. Cope describes several valuable tests of his own invention, such as the obturator and femoral tests, which have now passed into general use. Numerous descriptions of cases illustrate his ideas, and the sequence which he cites in order to establish his theory regarding phrenic shoulder pains is of real interest. The book is full of suggestive ideas, and not the least part of its value lies in its appeal to the clinician to use his hands and eyes.

ENDOCRINOLOGY.

Goiter. Nonsurgical Types and Treatment. By ISRAEL BRAM, M.D. New York: The Macmillan Company. 1924. Pp. 479. 31*s.* 6*d.*
Les maladies des glandes endocrines. By Prof. KNUD H. KRABBE. With a preface by Dr. STEPHEN-CHAUVET. Paris: Libraire Le François. 1925. Pp. 94. Fr.10.

THE American author, in a book entitled "Goiter," has some definite object in view other than to assemble all the known facts on the thyroid gland and its disorders. The subtitle of Dr. Bram's book gives the clue to what this object is, and the book consists for the most part of an elaborate plea against surgical interference in cases of exophthalmic goitre. An attempt is made to classify these non-surgical goitres on a rough pathological basis as the unencapsulated varieties of thyroid swellings, but the real classification adopted by the author is what he calls a therapeutic one. If an enlargement of the thyroid gland and the consequent disorder of the human economy can be cured by correct non-surgical procedures, then that type of enlargement is a "nonsurgical" one. Dr. Bram will only allow the surgeon to interfere in Graves's disease if there are marked pressure signs, if there are malignant changes in the gland, or if any septic focus requires eradication. His description of the treatment and general management occupies nearly half the book, and while there is no doubt tha exophthalmic goitre will frequently yield to the strict régime, the carefully selected diet, the medicinal, local, and psycho-therapeutic treatment as here described, the cure may be tedious and uncertain.

In Prof. Krabbe's book on the internal secretions this very point is emphasised, for he holds that surgical treatment of exophthalmic goitre is definitely indicated "if the patient cannot afford the cost of a long treatment which necessitates cessation of his occupation." Prof. Krabbe's book has the great merit, somewhat uncommon in books on this subject, of being short. In less than 100 pages the whole of what is now termed "endocrinology" is rapidly surveyed. Numerous excellent photographs of patients illustrate the classical types of disorders of the internal secretions, and each ductless gland is dealt with in turn with reference to pathology, symptomatology, and treatment. Of the two authors Prof. Krabbe had probably the more difficult task; his greater success is therefore the more creditable.

THE BLOOD.

A Guide to its Examination and to the Diagnosis and Treatment of its Diseases. Third edition. By G. LOVELL GULLAND, C.M.G., M.D., F.R.C.P.E., Professor of Medicine and Clinical Medicine in the University of Edinburgh; and ALEXANDER GOODALL, Assistant Physician in the Royal Infirmary, Edinburgh. Edinburgh: W. Green and Son, Ltd. 1925. Pp. 424. 25*s.*

FOR the past 12 years this work has occupied a proud position in this country as a standard text-book upon diseases of the blood, and there is every reason to believe that it will continue so to do. The present edition follows closely upon the lines of the second.

There may even be complaints that sometimes it follows almost too closely. At any rate, those hæmatologists who are always searching after some new thing—which sometimes means an old thing under a new name—will not find much to their taste in its pages. For the student, the practitioner of medicine, and the laboratory worker the book remains a mine of valuable information. The conservative attitude of the authors is consistent throughout the book; in the preface they protest against "the excess of differentiative nomenclature in which some writers have indulged," while in the index search is vain for the polysyllabic hybrids which burden the Folia Hæmatologica. For the most part the matter has been brought thoroughly up to date, though in some places the additions are rather sketchy, and in others a fuller statement of views in opposition to those held by the authors would have added to the value of the work. For example, that in the leukæmias the white cells found outside the bone marrow reach the sites at which they are to be found post mortem by a process of "infiltration," is not so evident to everyone as it is to Prof. Gulland and Dr. Goodall: the evidence is equally good, perhaps even better, for a local production. A study of recent American literature might further have shaken the faith of the authors in another article of their creed, namely, that the largest leucocyte—that cell having no generally accepted name, but described by Nägeli as the "monocyte"—is merely an overgrown lymphocyte. Of the numerous suggestions that have been made as to the nature of this particular cell, this seems to us one of the least happy.

In the clinical sections there can be no question as to the value of the sober and conservative nature of the authors' outlook. Yet it is depressing to mark how little advance in the treatment of any of the blood conditions has been made since the appearance of the last edition.

THE MEANING OF MEANING.

By C. K. OGDEN and I. A. RICHARDS. With an Introduction by Prof. POSTGATE, and Supplementary Essays by BRONISLAW MALINOWSKI, Ph.D., D.Sc., and F. G. CROOKSHANK, M.D., F.R.C.P. International Library of Psychology, Philosophy, and Scientific Method. London: Kegan Paul, Trench, Trübner and Co., Ltd. Pp. 544. 12s. 6d.

FOR a good many years now the study of the nature and foundations of knowledge and of the processes involved in thought and the expression of thought has ceased to play any necessary part in the education of medical students. This is the more to be regretted since, at the present day, no subject more urgently occupies the attention of men of science and of philosophers than does that of the relations on the one hand between the *problems* of philosophy and those of science, and, on the other, of those between the *methods* of philosophy and those of science. Philosophers have to consider the processes and nature of the human intellect: men of science, in these latter days, must consider how far the subjective conditions of sense experience, of thought, and of the expression of thought, qualify the apparent objectivity of the results of observation, or what is taken for observation. One consequence of the neglect of these and allied questions by teachers of medicine is that medical students and, later, practitioners, whilst holding as a creed that facts alone form the proper basis of medicine, and that speculation, logic, and metaphysics are alike to be abhorred, yet mistake our subjective interpretations of sense experiences (if not our verbal symbolisations of these interpretations) for facts and realities. Or, if such mistake is not consciously made, they do at any rate speak, and ultimately come to think, as if our ideas and symbolisations were really facts and data of objective experience. No one has been more insistent on the essentially fallacious quality of some of these forms of thought and expression than Sir Clifford Allbutt who, in a letter written only a few weeks before his death, lamented the persistence with which too many of us repeat, in betrayal of our own minds, foggy phrases that indicate false beliefs in the real existence of text-book "entities."

It is against these and similar verbal and mental confusions that Mr. Ogden and Mr. Richards, and their collaborators, have declared war; and a pertinent and illustrative fallacy of the kind they would combat is ready to hand. At the present moment active discussion engages as to the relations between three alleged "entities": variola, varicella, and alastrim. The question that is formally posed is whether alastrim is variola, or is varicella, or is neither, and perhaps a third object in Nature. Now, while few if any of us would be willing to admit that we are in the habit of mistaking a name for anything but a label to be fixed to something for denotive purposes, far fewer of us are willing to discuss the nature of the "things" to which the labels variola, varicella, and alastrim are at present attached. Yet, on reflection, all must admit, we think, that the "things" denoted by these names are not external objective existences but parts of our mental machinery—concepts, as some would say,—*general notions* that have been formed for the purpose of, and in process of classifying certain experiences, or individual cases, and series of cases. The true problem, then, is not that of the identity of these named "concepts"—whether or no alastrim "is" this, that, or the other disease—but, in what manner and why should we classify and arrange certain series and groups of cases, and label the classes that we form? And, in order to arrive at a satisfactory and convenient classification, for our present purposes, we should ask whether the hitherto recognised categories—variola, varicella, and alastrim—are properly derived from the particulars, or observed cases. The question as to whether there *are* two or three separate diseases corresponding to the three names is then clearly one which raises metaphysical, or at least linguistic as well as medical problems, and these should not be raised until we have clear notions as to what we mean by "a disease." If the true problem be approached in the right manner, the possibilities of common agreement are appreciable, but, so long as some maintain that there are three, and others but two, objects in Nature waiting to be distinguished, amongst which the three names should be distributed, confusion will reign.

Now the purpose which the authors of this extremely interesting book have had in view is, we take it, to furnish all those who wish to observe accurately, generalise adequately, and express correctly, with a sort of Novum Organon, an instrument with which to think, that will obviate much of the present and prevailing confusion due to the general disregard of fundamentals. It is true that the authors discuss their theory in general terms, but elsewhere, in the "Foundations of Æsthetics," they have applied their own method to the analysis of that difficult subject and to the confusions that arise in talk about the Beautiful, while in supplementary essays to the present volume Dr. Malinowski has ably shown the high value it possesses in anthropological research, and Dr. Crookshank discusses its importance in medicine. The latter writer, indeed, in earlier essays, and in his book about influenza, appears to have made some tentative advance along the path now beaten out by Mr. Ogden and Mr. Richards, emphasising the need for distinction between what he, for epidemiological purposes, calls names, notions, and happenings and which they call words, thoughts, and things. Dr. Crookshank takes up the position that at the present day, at any rate in medicine, the tendency is to confuse what in the older logic were called universals and particulars, and to treat of universals, classes, and the like—such as special diseases—as if material, or at any rate Platonic realities. He would range himself amongst those who adhere to the Conceptua-

list School, founded in mediæval times by William of Occam, who first clearly recognised the distinction between the "conceptual" as opposed to the "realist" and "nominalist" views, in respect of universals and classes, and names given to them. This line of thought has never been without representation in English philosophy, and has been carried on, through Hobbes, Locke, Hume, and Bentham, down to to-day. It is now permeating science, and has been ably expounded by Vaihinger, in "The Philosophy of As If."

But the authors of "The Meaning of Meaning" have attempted to cut a way through the mazes of metaphysical and logical discussion by giving, more fully than has yet been attempted, adequate attention to what they call a theory of symbols. Verbal symbols—words and phrases—stand for them as labels, as means of identification for the thoughts that, in this context, are called references. The thoughts or references have, as basis, signs, or what is thought about, and these signs are called referents. While in the simplest mental processes referents are single signs or groups of such signs, or sense-experiences, thoughts themselves may in process of higher interpretations become referents. Incidentally, so long as we distinguish between our symbols, our references, and our referents, it is, for the moment, quite unnecessary and irrelevant to bother about theories of reality, and we can, if we please, adopt the authors' method of thought and expression with equal convenience and advantage whether we be materialists of the most common-sensical variety or idealists of any school—Berkeleyan, Kantian, or Hegelian. Illustration of the applicability of the principles to medical discussion is given by Dr. Crookshank in his appendix to "The Meaning of Meaning," wherein he attacks anew the problems raised by the recent recognition of encephalitis lethargica as an entity *sui generis*, distinct from polioencephalitis and poliomyelitis. According to Mr. Ogden and Mr. Richards, our "cases" are our referents, which when accurately observed should form the "material" of our references, or disease-concepts, whilst these concepts, if adequately constructed, should, when correctly symbolised or named, yield that economy in thought which Mach held to be the object of all science. Thus we are furnished with rules for our better deportment in expression, and for correct symbolisation, so that we should not fall readily into the error of confounding our references and our referents, our symbols and our references—that is to say, our thoughts with what we observe, and our names with our thoughts and with objective or subjective "things."

The Theory of Symbols is, indeed, very completely worked out, and a Theory of Signs outlined in some detail, in a work whose implications are far-reaching. Not every chapter therein is easy reading, but every chapter contains much that is valuable, and a good deal that is amusing, while the whole lesson will be of high utility to all who desire to steer clear of the fallacies that attend the communication of thoughts to others—fallacies which have led to lack of economy in scientific and literary endeavour as well as to profound misunderstandings and thus become heavy obstacles in the path of human progress.

JOURNALS.

BIOCHEMICAL JOURNAL. Vol. XIX., No. 1, 1925. Among the contributions to this issue are the following: G. Hunter writes on the Diazo-Reaction in Urine. The subject is approached from an historical standpoint and Ehrlich's reaction is analysed. The reagent favoured by the author is that of Koessler and Hanke. An attempt is made to systematise the different types of diazo-reaction in normal and pathological urines. The Ehrlich diazo-reaction in acid solution is merely referred to, as there has never been any question of its specificity for bilirubin in biological fluids. The diazo-reaction in alkaline solution has been divided into two types, A and B. Type A reaction is characterised by a gradual development of colour until a relatively stable maximum is reached. Type B reaction is given by an immediate development and rapid disappearance of colours. All urines give some form of Type A reaction. Type B is given only by pathological urine, especially from typhoid and measles. The substance responsible for Type B reaction is unidentified, but suggestions as to its probable nature are given.—The Presence of Vitamin A in Yeast Fat is discussed by E. M. Luce and I. Smedley MacLean. Several dieting experiments were performed on rats. The results are discussed at length, three charts showing various stages of growth are given, and the possibility of synthesis of vitamin A by the yeast cell is not lost sight of.—J. M. Henderson contributes an article on the Effect of Irradiation and Diet on Calcium and Phosphorus Metabolism. One hour's irradiation daily for 24 days with a carbon arc lamp definitely increased the calcium and phosphorus retention in a pig on a badly balanced diet, as compared with a control kept in the dark. Both Ca and P in the urine rose following on irradiation; there was no concomitant increase in body-weight. In pigs fed on a satisfactory diet, well balanced particularly with respect to Ca and (P_2O_5 : CaO − 1 : 1) darkness or irradiation had very little effect on Ca and P retention. Analyses of the bones were in general agreement with the findings of the metabolic analyses.—The Bactericidal Action of the Blood in Certain Dietary Deficiencies is the title of a paper by G. M. Findlay and I. Smedley MacLean. They attempt to determine the effects of diets deficient in vitamins and certain other essential factors on the bactericidal power of whole blood. Experiments were made with rats and the bactericidal power of whole blood for *Staphylococcus aureus* was investigated, when the following conclusions were arrived at. The blood of normal rats, tested against *Staphylococcus aureus*, showed a killing power of 70 per cent. The blood of rats fed on a diet deficient in vitamin A and the antirachitic factor showed a reduction in killing power only after the onset of keratomalacia or some other infection. In rats fed on a diet deficient in vitamin A and the antirachitic factor, but exposed to ultra-violet light, the onset of bacterial infection and the reduction in the killing power of the blood were delayed. Rats suffering from keratomalacia as a result of a diet deficient in vitamin A continued to show a low bactericidal power of the blood after exposure to ultra-violet light. Rats fed on a diet lacking phosphorus and the antirachitic factor showed in most cases a reduction of the bactericidal power of the blood. Rats fed on a diet lacking vitamin B showed a reduction in the killing power of the blood.—In an article entitled the Early Action of Insulin on Diabetes, L. Lawn and C. G. L. Wolf attempt to throw some light on the effect of insulin upon carbohydrate metabolism. Details of four cases are given and the authors offer the suggestion that the first action of insulin is to convert glucose into glycogen, and as soon as a reasonable demand of the tissues for this substance is satisfied the insulin enables the organism to mobilise and burn the glycogen in the usual way.—A Chemical Study of Defective Ossification in Rachitic Animals, by R. Robinson and K. M. Soames. In this paper the chemical aspects of the cause and nature of rickets are studied. Numerous dieting experiments were carried out on rats; tables showing Ca and P in diets and acid-soluble P in whole blood are given as well as bone analyses; results tend to show that the defective calcification of the skeleton resulting from inefficient diets is probably not due to any deficiency of inorganic phosphate or of the specific phosphoric ester in the blood, or of the enzymes in the bone by which the ester is hydrolysed. The view is held that the defective calcification is mainly due to a deficiency of inorganic phosphate ions, while this is not the case when the defect is caused by a lack of the fat-soluble factor alone.

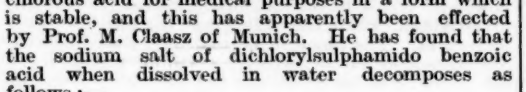
CAMBRIDGE UNIVERSITY MEDICAL SOCIETY MAGAZINE. Vol. II., No. 2.—This magazine maintains its high level, and much of the present contents is interesting to other than local readers, who are the only readers who can be expected to appreciate the lighter side of the production. Mr. Vernon Pennell's essay on chronic iliac pain and Sir William Willcox's notes on fatal poisoning may be mentioned for their clinical value, while to that increasing group of medical men who are interested in the ancient story of their profession, Dr. W. H. L. Duckworth's note on Harvey's MS. Prælectiones will be very interesting. Once again we have proof of the real sterility of the intellectual world during the Dark Ages. Dr. Duckworth shows in his survey of Harvey's quotations and references that for the most part the great pioneer's sources of information as to work accomplished previously, and as to opinions published by his predecessors, were twofold—namely, the writers of antiquity and those of the sixteenth century. Between these is silence.

Reports and Analytical Records.

PANTOSEPT TABLETS.

(MANUFACTURED BY CHEMISCHE FABRIK EHRENSTEIN. SOLE DISTRIBUTORS: BARTON TRADING CO., LTD., 4, DEAN STANLEY-STREET, WESTMINSTER.)

THE value of Dakin's solution—which is essentially a mixture of boric acid and bleaching powder—is well known to medical practitioners, but it has the disadvantage of requiring special preparation. Many attempts have been made to produce hypochlorous acid for medical purposes in a form which is stable, and this has apparently been effected by Prof. M. Claasz of Munich. He has found that the sodium salt of dichlorylsulphamido benzoic acid when dissolved in water decomposes as follows:—



yielding the sodium salt of sulphoamido benzoic acid and hypochlorous acid. The hydrated ($3H_2O$) sodium salt of dichlorylsulphamido benzoic acid mentioned above has been christened "Pantosept."

When "Pantosept" was analysed the following results were obtained:—

Available chlorine	.. ..	15·5 per cent.
Sulphur	.. ..	10·0 ,,
Sodium	.. ..	15·0 ,,
Silica	.. ..	2·6 ,,

Borates, sulphates, chlorides, phosphates, carbonates, and bicarbonates were absent. The silica present represents about 4·2 per cent. of sodium silicate, which has probably been used as a binding material. The available chlorine is rather lower than that calculated from the formula set out above.

"Pantosept," which is supplied in tablets, dissolves practically completely in water and the hypochlorous acid thus liberated is then capable of exercising its well-known antiseptic action. It is an ingenious and convenient form of obtaining a solution of hypochlorous acid by the addition of water to a solid material which, unlike bleaching powder, is quite stable.

ETHIDOL: ETHYL IODO-RICINOLEATE.

(BURROUGHS, WELLCOME AND CO., SNOW HILL BUILDINGS, LONDON, E.C. 1.)

This preparation is an outcome of the successful internal use of iodicin, a calcium salt of iodoricinoleic acid. In ethidol the calcium base is replaced by the ethyl radical and the result is a product, presenting 20 per cent. of iodine in organic combination, suitable for intra-glandular injection and inunction. Its therapeutic application is based upon its iodine content and penetrative power, and extended clinical trials have yielded evidence indicating its usefulness and justifying its introduction to the medical profession. It can be employed as an injection in rheumatoid arthritis and in the treatment of tuberculous and scrofulous glands, and has been administered in epilepsy. As an inunction successful clinical results have followed its use, again, in rheumatoid arthritis and in simple goitre; and, in view of its iodine content, its further trial is suggested in sprains, neuritis, and some skin affections such as eczema, psoriasis, ringworm, and erysipelas. Ethidol does not stain or cause local irritation. It may be heated to 100° C. before injection, which appears to be attended with no discomfort. Injections are stated not to cause induration and are usually painless. The strength can easily be modified as the preparation is miscible with almond or olive oil. It is issued in bottles of 1 oz. and 4 oz.

THE "SOLOID" URINE-SUGAR-TEST CASE.

(BURROUGHS, WELLCOME AND CO.)

The above firm has also put upon the market a sugar-test case for the use of diabetics who are under insulin treatment at home. The case is made of stout cardboard and contains a liberal supply of tests, 24 in all. The full contents are as follows: Two tubes of "soloid" alkaline citrate, one tube of "soloid" copper sulphate, one medicine dropper with rubber bulb, two test-tubes graduated, one wire test-tube holder, one small square of asbestos, one bottle of 25 "soloid" hexamethylenetetramine, and one of these placed on the asbestos square will burn for three minutes, sufficiently long to conduct one test. The test is very reliable, and amounts as low as 0·1 per cent. of glucose are read with ease. The introduction of a simple heating medium, obviating the employment of methylated spirit, is a feature which will be readily appreciated. The flame is smokeless and therefore there is no tendency for the reading to become obscured. The case is compact, measuring 5 in. × 4¼ in. × 1¼ in., and may easily be carried in the pocket. The price is 5*s.* 5*d.*

GOLDEN CORNISH CLOTTED CREAM.

(MAWNAN FARMS, LTD., MAWNAN, FALMOUTH.)

We have received from Mawnan Farms, Ltd., a sample of the cream which they distribute as specially suitable for invalids and delicate children, and, judging from the letters received from medical men, it appears that the manufacturers are supplying a really useful thing. The cream is sent direct from the farm fresh daily, absolutely pure and free from preservatives.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED MARCH 21ST, 1925.

Notifications.—The following cases of infectious disease were notified during the week, namely:—Small-pox, 133; scarlet fever, 1718; diphtheria, 878; enteric fever, 36; pneumonia, 1523, puerperal fever, 55; cerebro-spinal fever, 12; acute poliomyelitis, 5; encephalitis lethargica, 63; continued fever, 1; trench fever, 1; dysentery, 15; ophthalmia neonatorum, 137. There were no cases of cholera, plague, or typhus fever notified during the week. The number of small-pox cases showed a decrease of four from the number for the preceding week. Twenty-nine cases were notified from Derbyshire (Derby C.B., 25); 23 from County Durham (West Hartlepool C.B., 21); 16 from Northamptonshire (Kettering, 14), 12 from Northumberland, 12 from Notts, and 25 from Yorks, North Riding (Middlesbrough C.B., 25).

Deaths.—In the aggregate of great towns, including London, there were 5 deaths from enteric fever, 127 from measles, 11 from scarlet fever, 155 from whooping-cough, 39 from diphtheria, and 304 from influenza, as compared with 283, 361, 346, and 352 in the four preceding weeks. In London itself the deaths from influenza numbered 48, from whooping-cough 41, and from diphtheria 12.

THE LANCET.

LONDON: SATURDAY, APRIL 4, 1925.

THE PENALTIES ON PANEL DOCTORS.

THE Panel Committee for the County of London recently reported adversely to the Ministry of Health on the medical conduct of a panel practitioner, and accordingly the Inquiry Committee appointed for the purpose by the Minister of Health investigated the circumstances, with the result that the charge of gross negligence, formulated by the Panel Committee, was considered to have wholly failed. The Inquiry Committee added that as the Panel Committee had not been justified in making the representation and in putting in motion the machinery, they would have to pay to the practitioner his taxed costs of the inquiry, while it was resolved not to remove the name of the practitioner from the medical list. At the same time, however, the Inquiry Committee agreed with the recommendation of the Panel Committee that a substantial reduction should be made from the practitioner's remuneration, in accordance with which the sum of £20 has been, or will be, withheld by the Minister of Health from the money payable to the Committee in respect of medical benefit, which sum will be recovered from the practitioner. Other cases dealt with by the Inquiry Committee resulted in the censure of a practitioner for the irregular charging of fees for drugs to an insured person, and in the acquittal of a practitioner for gross negligence in failing to pay certain visits to a case of appendicitis. But in this case, as in the case first referred to, the acquittal of the charge of gross negligence was qualified by a fine of £10 for failure to provide a proper standard of medical treatment; while other practitioners, concerning whose conduct of their work complaints had been made, were fined small sums for not complying with certain terms of the service, for not keeping proper records, or for irregular acceptation of fees.

These proceedings have aroused considerable interest in the panel service who, to a man, bear in mind the case of a monstrous fine recently inflicted in analogous circumstances, and the feeling is becoming widespread that the powers of the Ministry of Health in dealing with accusations against panel practitioners are improperly arbitrary. It is not difficult to see how these powers, which are not only unprecedented but were never contemplated when the National Health Insurance Act was passed, have come into being. The Minister of Health is responsible to Parliament for seeing that insured persons get their rightful benefits under the Insurance Act, and accordingly has to see that the insurance practitioners carry out their contracts. Therefore, he must have some punitive discretion, and it will be admitted that, to prevent the occurrence of illegalities or abuses, penalties constitute a reasonable procedure. But a procedure which is reasonable in concept may in practice become the reverse, and it is difficult to understand on what grounds practitioners can be fined by a tribunal which holds that the indictments were incorrect; while it is comic, though the results may be tragic, that there should be no limit apparently to the fines that may be demanded. In our Parliamentary report this week will be found an interrogation put to the Minister of Health, inspired by two of the cases alluded to above, but having a general bearing on the whole matter. The Minister of Health explained the action of his Department on the ground that, while gross negligence was not established in either case, failure to exercise reasonable care in one of them and to visit at a critical period in the other, were indicated. This is a perfectly straightforward reply, and it is no reproach to the Minister that it will not be found sufficient. The Minister of Health cannot and does not attempt to prescribe the medical treatment which should be given, and which, we presume, must be settled by the professional standards which hold good for the area in which the man practises. The practitioner who acts in any circumstances "to the best of his knowledge and belief" should not be penalised. Here we would remind those who are most critical of the valuable services rendered to the country by insurance practitioners that, when they assume modern methods of diagnosis as essential to a correct diagnosis, they are ill-informed, and may in many respects be belittling the whole of clinical practice. These are the persons who initiate the actions for malpraxis or negligence brought against medical practitioners, where, whatever the verdict, pecuniary and professional damage to the doctor and expenditure of money by the complainant are the inevitable results.

But we do not expect the Ministry of Health to react in accordance with what are conceived to be public demands. The Minister of Health has responsibilities towards his officers as well as towards the public, of whom his officers are also a part. The knowledge that disciplinary inquiries will be made upon rightful occasions, and that penalties will be meted out logically in accordance with undisputed findings, encourages those insurance practitioners who need the stimulus to comply with the terms of the service. But the feeling that a man can be penalised when the indictment breaks down, the apprehension that a Committee of Inquiry may not be able to detect when the views of a Panel Committee represent a reasonable estimate of what should be demanded of a practitioner, and any capricious or vindictive fines—these things do not encourage good work.

RADIUM THERAPY.

THERE has been published this week a clinical index of radium therapy, written by Mr. A. E. HAYWARD PINCH, medical superintendent of the Radium Institute, with the object of bringing to the notice of medical practitioners generally the wide range of diseases covered by this branch of therapeutics. The cost of the publication is being borne by the Committee of the Institute, and the volume is intended for gratuitous distribution to the medical profession. The book is based upon the actual work carried out at the Radium Institute, clinical signs and symptoms are recorded as well as the lines of treatment adopted and the results obtained, and in all cases the evidence has been derived from a study of the patients' case-sheets. Emphasis is laid upon the salient clinical facts by which the different diagnoses were established and in accordance with which the advisability of radium treatment was determined, while little or no attempt has been made to deal with the ætiology and pathology of the diseases concerned, and, similarly, questions of apparatus and technique, exposure, and dosage have been dealt with briefly. But a short introductory chapter sketches the physics of radium, and this

must be read carefully if the information put out is to be read with understanding. As during the period which has elapsed since the opening of the Radium Institute in 1911, the annual reports of the medical superintendent have been regularly reviewed in these columns, it follows that much of this clinical index has been brought in detail before our readers on previous occasions, but undoubtedly the collection and collation of this previous work in chapters whose length indicates the relative importance of each subject to the practitioner will be valuable to many readers in whose recollection the serial notices may not be fixed. We congratulate the author upon a valuable compendium, bringing up to date in simple terms our knowledge of radium therapy.

The rationale of radium therapy is based upon the fact that the radium irradiation properly administered upon any living cell produces certain effects, occurring in three phases—namely, increase of cell activity, arrest of cell growth, and degeneration and destruction of the cell. But this fact is supplemented by another—namely, that pathological cells and normal cells respond differently to the action of radium rays, the three phases of transformation being distorted, so that proliferation is more rapidly brought about, activity is more quickly arrested, and degeneration occurs more rapidly. On this point Prof. SIDNEY RUSS,[1] discussing the selective action of the rays in passing through the tissues of the body, has said that the rays exert some degree of selective action upon malignant and normal tissues, it being more than probable that the series of events following irradiation is determined somewhat by the interplay of forces between them. He finds, in fact, "the sequel to tumour irradiation depends not only on the dose which it has received, but on the nature and extent of the reaction of the normal tissues of the host." The chief importance, then, in the treatment of malignant disease by radium is to kill malignant cells with as little damage to the healthy cells of the body as possible, and the main problem of radium therapy is correctly to estimate the dosage and exposure necessary to bring about the death of the pathological cells without damaging normal cells beyond the point of satisfactory repair. Insufficient dosage may bring about only a quick stimulus of what it is proposed to destroy. Too heavy dosage may produce the destruction of what it is necessary to conserve. Mr. HAYWARD PINCH, speaking in very general terms of the fundamental principles of radium therapy in dealing with a malignant growth, advises that every effort should be made to secure as uniform a radiation as possible to all parts of the growth, and considers that it is best to give a maximum dose at the first exposure.

The latter half of the book is taken up with summaries of the use of radium in diseases of the alimentary canal and its accessory glands, the thyroid, thymus, and spleen, and the lymphatic system, with chapters on the results in diseases of the breast, and in gynæcology, urology, dermatology, ophthalmology, laryngology, and rhinology or otology generally. Radium in internal medicine is briefly considered, and the clinical aspects of the work of the research department between May, 1919, and December, 1924, are summarised by Dr. J. C. MOTTRAM, director of the pathological laboratory. An appendix is added by Mr. W. S. ALTON, the Director of the Chemical and Physical Laboratory of the Institute, which deals with the evolution of the present-day technique of preparing radium and radon applicators. This is particularly timely, as a misconception has been disseminated with respect to radium emanation, probably due to the fact that only comparatively recently the term radon has been adopted in accordance with a suggestion made in 1923 by an international committee on chemical elements. The technique of the radium emanation treatment has, no doubt, been modified, but, as Mr. HAYWARD PINCH points out in our correspondence columns, the method has been employed almost since the opening of the Institute, as will be seen by the details supplied in the report of the Institute for 1912. Since this time radium emanation tubes have been placed with increasing frequency in proper hands by the Institute, a procedure which also is followed at the Manchester and District Radium Institute under the supervision of their radiologist. The general conclusion of Mr. ALTON is, that there is no distinction to be made in their therapeutic uses between radium and radium emanation, reference being made to a chart, included in the Clinical Index of Radium Therapy, to show that they are successive members in the disintegration series of the same parent body. Employment of one or the other can therefore be dictated by the various circumstances of the case.

[1] THE LANCET, 1923, ii., 1314.

HOSPITALS AND THE BURDEN OF RATES.

AT the last annual general meeting of the governors of the London Fever Hospital Sir CHARLES STEWART was able to report an improvement in the financial position. This admirable institution nevertheless increased its debt last year, though the debt would have been diminished had the hospital not been burdened with heavy demands for local rates. Sir MACKENZIE CHALMERS, the chairman of the meeting, raised an old, but none the less an exceedingly interesting, point by suggesting that hospitals should claim to be exempted from rates representing expenditure in which they have no interest. It is undeniable that a hospital benefits by expenditure which the local authority incurs over sewerage, the removal of house refuse, and the maintenance and lighting of the adjacent roads. It may also be said to benefit by the potential protection of the police force and the fire brigade. On the other hand, a hospital has no very direct interest in the outlay—however small its proportion—under the Baths and Washhouses Acts or the Public Libraries Acts, or in the major expenditure on education or poor relief, or on the equalisation of London rates which unemployment and the industrial crisis have made so burdensome.

It is easy to ascertain the nature of the expenditure for the payment whereof our rates are levied. Parliament could soon determine which are the items by which a hospital actually and directly benefits. If hospitals were rated in respect of those items alone, their struggle for existence would be much less acute, and the public would be the better served with improved facilities for treatment. Though Sir MACKENZIE CHALMERS's plea is not for the total exemption of hospitals from rates, the fact remains that in many not wholly dissimilar cases exemption is given by law. In addition to county and municipal property, for example, churches, chapels, and certified places of religious worship, lighthouses, drill-halls, and scientific and literary institutions are exempt. The basis of the discrimination is doubtless the rendering of essential public service without commercial considerations of profit or dividend. Nobody alleges that these exempted premises or undertakings are unfairly subsidised at the expense of the general ratepayer. Why should not hospitals of approved service be entitled to some relief? With the assent

of all parties Parliament has given agricultural land a 75 per cent. exemption from various rates. The object—and a very proper one—is to preserve our agricultural system from extinction even at the risk of putting private profit in the farmer's pocket. Is not our hospital system worth preserving, where no question of private profit can possibly arise? The case for the London Fever Hospital is strong. Founded as long ago as 1802, it has played its part in freeing London from serious epidemics; it has trained generations of expert fever nurses; and its expenses are necessarily high because it must maintain its resources at full strength to meet emergencies. If it asks for relief from the burden of the rates, a debating point may be made against the request. The hospital prides itself on the facilities it offers to those patients who prefer to contribute towards the cost of their treatment rather than to become inmates of a rate-supported institution. A hospital which exists for those who prefer not to throw themselves upon the charity of the rates is in a dialectical difficulty in soliciting relief from local taxation.

Meanwhile, the boot is on the other leg, for the London Fever Hospital as a ratepayer is at present contributing to the cost of running the institutions of the Metropolitan Asylums Board. Local authorities, of course, are hardly in a position to be generous. If they had both the means and the will to relieve a hospital, the legal doctrine of ultra vires and the threat of an auditor's surcharge stand athwart their purpose. Parliament should consider the question. Institutions which play an honourable part in the public health scheme of the country, and which are administered on sound lines and without extravagance, should not be allowed to be crushed out of existence beneath the weight of either local or imperial taxation.

BRITISH CONGRESS OF OBSTETRICS AND GYNÆCOLOGY.

WE publish elsewhere the detailed information concerning the fifth British Congress of Obstetrics and Gynæcology which will be held in London from April 22nd to 24th inclusive. These gatherings from their inception have endeavoured to promote coöperation in clinical research among obstetricians and gynæcologists in Great Britain and Ireland, and those who know our "Extra Number" dealing with modern methods in abnormal and difficult labour will recognise how many points in diagnosis and in treatment remain matters of opinion, even where general lines of practice are accepted. This is particularly the case with puerperal fever, eclampsia, and dysmenorrhœa, and local committees have been formed by the constituent societies of the Congress, charged with the duty of preparing reports upon one of these subjects yearly, the first being the subject for this year. The result of such coöperative effort, and of the periodical conferences, has been undoubtedly to develop a spirit of unity and a desire to promote serious work, and already many questions have been settled. We may contrast the position to-day with that of some 20 or 25 years ago, when a paralysing discord prevailed, England and Wales, Scotland and Ireland having diverse views, while the same might be said not only of metropolitan and provincial schools, but of schools in the metropolis itself. A far greater unity exists to-day in the development of our midwifery service, and if the things which remain for settlement are numerous every advance in our scientific knowledge adds to the list. There will always be work ahead, and the influence of the impending Congress, like that of its predecessors, will be towards the establishment of views which represent accord between the obstetrical teachers of Great Britain and Ireland.

Annotations.

"Ne quid nimis."

THE USE AND ABUSE OF DRUGS.

IN the middle of last century the doctrine of therapeutic nihilism found its chief exponent in Josef Skoda, a leader of a new school of thought in Vienna, who declared that while we can diagnose and describe disease we dare not expect by any means to cure it. In this country up to the present day the influence of that doctrine persists—diagnosis is taught in our medical schools as the essential equipment of the young practitioner, and the student hears too often that a physician must be judged, not by the success of his treatment, but by the extent of his knowledge. medicine as the art of healing the sick giving place to medicine as the study, per se, of the disease. But the tide of opinion is turning against therapeutic nihilism, and Prof. W. E. Dixon, at a meeting of the Hunterian Society on Monday, March 30th, stated as one of the reasons which have altered our views on the action of drugs, that we have now learned that the body itself works by means of drugs of its own manufacture. It manufactures alkaloids, just as plants do, for its own needs. In emergencies our internal secretions may provide us with drugs required for our well-being—in rage or fear a rush of adrenalin will produce the conditions required for fight or flight. Chemotherapy is also opening up a new outlook in medicine with regard to specificity, and, while increasing specificity in pharmacology widens the field of successful treatment of disease, it also increases the possibilities of the abuse of drugs. It is a difficult matter to draw the line between use and abuse of a drug. For example, quinine is a specific for malaria, but its use to treat a cold may be classed as an abuse so long as there is no definite organism susceptible to quinine and ætiologically connected with the cold. Dr. H. H. Dale, speaking at the same meeting, defined the abuse of drugs as their reckless and unintelligent use. Intelligent use of a drug, he explained, did not mean that the practitioner must have a full scientific appreciation of a drug's action; were that necessary many valuable drugs would require to be discarded. But it was essential to make close and accurate clinical observations, and not to rely on vague impressions and rule-of-thumb restrictions. Enlightened empiricism he described as being often a better procedure than basing treatment on a supposedly scientific foundation. Much is now being published both by scientific and lay writers concerning the rationale of the action of certain pharmaceutical products, and it is couched in scientific or pseudo-scientific terms whose main characteristic is extreme plausibility. Many of these "scientific" explanations contained in pharmacological "literature" Dr. Dale considered to be dangerous, the danger lying, in his opinion, in the excessive modesty of the medical profession who were inclined to look on what they could not quite understand as being very deep and possibly very true. It was impossible, he pointed out, for anyone to know more than his own corner of the scientific world, and such an attitude of accessibility to mysterious dicta coming from another corner was to be deprecated. As an instance of this Dr. Dale quoted several statements that had been made on the one hand with perfectly genuine intent by a leader of the medical profession with regard to the value of colloidal substances, and on the other by a firm of commercial chemists, perhaps not so ingenuously; but both sets of utterances were entirely misleading. It was time, he said, that something was done to rescue what might be valuable in treatment from what might be manifest abuse, but the difficulties in differentiation are considerable. This should not, however, cause them to be held insuperable. We congratulate the Hunterian Society upon having elicited at their last dinner meeting such wise speaking on an important topic. The dinner was held at Simpson's Restaurant, Cheapside, and was well attended.

THE FIGHT AGAINST MALARIA.

LAST summer the Malaria Commission of the League of Nations Health Organisation undertook a tour of three months for the study of the incidence of malaria in Eastern Europe, visiting Italy, the Balkans, and Russia, and much valuable information was obtained. This year, from May to September, the Commission is extending on similar lines its inquiry into malaria conditions prevailing in Egypt, Palestine, Syria, eventually Turkey and Asia Minor, Sicily, Corsica, and Spain. At a session now in progress the Commission, which consists of experts from Great Britain (represented by Colonel S. P. James, of the Ministry of Health), France, Germany, Italy, Poland, Rumania, and Holland, is considering a final report on malaria in Albania prepared at the request of the Albanian Government, a request from the Turkish Government for the appointment of an expert to help in organising an anti-malaria campaign in Turkey, and a note from the French Government asking for a special inquiry in Corsica. Finally, the Commission will consider the appointment of additional corresponding members from British India, the United States, and France, and a report on the question of the employment of quinine and other cinchona alkaloids against malaria. Owing to the depreciated exchanges, this question of the cheapest and most effective drugs to use against malaria is of fundamental importance in the work of the Health Organisation on this subject.

THE PROGNOSTIC SIGNIFICANCE OF SCARLATINAL NEPHRITIS.

OUR knowledge is still very incomplete as to the duration of the damage inflicted by an attack of scarlatina on kidneys which, through the acute stage of the disease, have reacted with albuminuria. Is, for example, the small granular kidney, with which we are so familiar in the post-mortem room, the final stage of a series of events beginning with a bout of scarlatina? And how long do most cases of scarlatinal nephritis last before albumin disappears from the urine, and what effect, if any, does scarlatinal nephritis have on the development of orthostatic albuminuria? These are some of the questions which Dr. H. Hansborg, of the Blegdam Fever Hospital in Copenhagen, attempts to answer in a paper published in *Acta Medica Scandinavica* for Feb. 12th. In the 10-year period, 1911-1920, his hospital admitted 75 per cent. of all the cases of scarlatina notified in Copenhagen. Among the 14,339 cases of scarlatina admitted in this period, there were 612 complicated by hæmorrhagic nephritis. After subtraction of the cases which proved fatal in the acute stage of the disease, there remained 588 patients, 284 of whom were re-examined from one to ten years after discharge, the heart and blood pressure as well as the urine being investigated. Dr. Hansborg made a point of examining the morning urine in those cases in which orthostatic albuminuria was suspected, and he found that among the 284 ex-patients there were 23 who were suffering from albuminuria which was merely orthostatic. There was one patient found to be suffering from chronic nephritis, the characters of which distinguished it from that of scarlatina, and there was only one patient whose albuminuria, which had lasted for five years, could be reasonably regarded as a sequel to the scarlatinal nephritis. As many as 259 of the re-examined ex-patients showed no evidence of renal disease. Of these 259 patients, as many as 235 were already albumin-free when discharged from the fever hospital. Several of the remaining 24 patients took more than a year after discharge to get rid of their albuminuria. With regard to the 23 patients found on re-examination to be suffering from orthostatic albuminuria, Dr. Hansborg raises the question, May this condition be the result of a hæmorrhagic nephritis developing during an attack of scarlatina? One of his reasons for answering this question in the negative is that the frequency with which patients who had suffered from scarlatinal nephritis developed orthostatic albuminuria was no greater than the frequency with which this condition occurs in the general population at the same age. Besides, there was no relation between the severity of the scarlatinal nephritis and the frequency of the subsequent orthostatic albuminuria. Additional value would be given to Dr. Hansborg's investigations and reassuring conclusions if the former were to be repeated on the same material some score of years hence.

ACTIVATED CARBON.

ORDINARY charcoal, and especially bone black, is well known to possess considerable properties of decolorising liquids, absorbing gases, and promoting chemical reactions. Of recent years a modification of the element has been prepared known as activated carbon in which these properties are very highly developed as compared with the best bone black or any other hitherto known variety of carbon. In activated carbon the pores are of almost incredible smallness in size and have entirely porous walls which are not clogged up with impurities, so that the chemical reactivity of the material, on the principle of what the chemist terms "surface action," is improved out of all proportion. The methods of manufacture are complicated and require great experience, one general process, for example, being to carbonise under regulated and definite conditions carefully prepared carbonaceous mixtures, followed by an elaborate purification and extraction. In connexion with the manufacture it is right to mention the firm of Sutcliffe, Speakman, and Co., Ltd., of Leigh, Lancashire.

An important technical application of activated carbon is the extraction and purification of gases, especially the direct separation of motor spirit from the crude gases evolved in the carbonisation of coal, shale, and other carbonaceous material, by the use of a bed of the material. When this is saturated steam is blown through, and the motor spirit recovered in an extremely pure condition, thus eliminating a considerable amount of expensive fractionating plant. In the same way solvent naphtha and other solvents can be recovered and purified, and another valuable outlet is the absorption of obnoxious smells and vapours. The decolorising of oils and fats on these lines is almost entirely a new field and important developments are pending, the method being of considerable advantage for the purification of tallow, coconut oil, linseed oil, peanut and corn oil, cotton-seed oil, and castor oil. In the latter case, for example, fuller's earth is at present used, but the addition of activated carbon, about 5 per cent. by weight, gives far superior results. For solutions the material is finding the most extensive application, especially for cane-sugar, glucose, brewing sugars (maltose and lactose), tartaric acid, cream of tartar, citric acid, lactic acid, and organic compounds used as intermediates in dyestuff manufacture, together also for the extraction of gold from excessively dilute solution 1 part per 10,000,000 in the cyanide process. The purification of ordinary alcohol and the extraction of higher toxic alcohols (fusel oil) is another similar application. In applying the treatment to liquids generally the activated carbon is as a rule simply stirred up with the heated liquid for a short period and then blown through filter presses, the product being subsequently revived by various methods after acting for a number of times. Thus it may be boiled with water, re-burnt, or treated with acids or alkalies, and the method is capable of almost endless applications, especially, as already indicated, different carbons may be supplied for absorbing different materials, whether from liquids or gases. Activated carbon possesses considerable interest from a medicinal point of view since it is used in the tablet or powder form for the correction of flatulence, dyspepsia, and diarrhœa, and is said to be much superior in this respect to ordinary powdered charcoal. Indirectly it is of great value also in many different directions in the manufacture of pharmaceutical products, both for decolorising

and purifying. It is also employed in the preparation of strychnine, quinine, brucine, and other alkaloids, and in connexion with very many different drugs such as antipyrine and phenacetin.

THE SEX INCIDENCE OF CANCER.

WE have been told for so long and by so many authorities that cancer is much more frequent in women than in men that we are inclined to regard as unorthodox and heretical the view that the sexes suffer equally in this matter. The view that cancer is more frequent in women is based on the obviously true statement that cancer of the reproductive organs attacks women much oftener than men; the greater longevity of women is also said to be a reason why they are supposed to be more subject to cancer than men. Some recent investigations suggest that the comparative immunity of males to cancer is fictitious, depending on the fact that the forms of cancer which are most deep-seated, and therefore most easily overlooked, are more common in men than in women. A recent paper by Dr. A. Renaud[1] of Lausanne contains an informing statistical statement on the notifications of deaths from cancer throughout Switzerland in the period 1901-20. It is interesting to observe with regard to these notifications that carcinoma and sarcoma are kept apart, and that when a patient suffering from cancer dies of bronchopneumonia or myocarditis, for example, the cause of death is notified as cancer and not as a disease of the lungs or heart. The average annual mortality in Switzerland during the 20 years under review was 4717, males being represented by 2347 and females by 2370 deaths. Considering that women outnumber men, it might even be argued that the risk of a man dying of cancer in Switzerland is even a little greater than the same risk for a woman. As Dr. Renaud calculates, among persons over the age of 40 the annual cancer death-rate in the period under review was 1 per 214 men and 1 per 243 women. He notes in this connexion that experimental cancer in mice is equally common in the two sexes. Among his Swiss cases, as great a proportion as 73 per cent. of all the cancers in males affected the digestive tract, notably the œsophagus, stomach, and rectum, whereas this localisation was comparatively rare in females. Indeed, in the case of cancer of the œsophagus, the ratio of males to females was as 6 to 1. In another recent publication Dr. F. G. Gade[2] has pointed out that in Norway women with 51·8 per cent. of all the malignant tumours are at first sight a little worse off than men with 48·2 per cent. But as 51·3 per cent. of the population in Norway in 1920 were females, it appears that in Norway as well as in Switzerland malignant disease is equally distributed between the two sexes. It would be interesting if the cancer statistics of other countries, which have hitherto been supposed to show a preponderance of malignant disease in women, were to be revised in the light of the statistics from Switzerland and Norway.

THE LAST ILLNESS OF PRESIDENT EBERT.

THERE were special reasons why no mystery should be allowed to attach itself to the circumstances of the death of the late German President Ebert, and his medical advisers have, accordingly, published a full account of his last illness and the partial post-mortem examination. The authors of the report, "Bericht über Krankheit, Operation und Tod des Reichspräsidenten Ebert," which is published in *Deutsche medizinische Wochenschrift* for March 13th, are Dr. A. Freudenthal, the President's family doctor, Prof. A. Bier, who operated on him, and Prof. O. Lubarsch, who examined the contents of the abdomen after death. It appears from Dr. Freudenthal's account that Ebert, who was 54 years old at the time of his death, had suffered for a few years from occasional attacks of biliary colic which, on one occasion, was associated with jaundice. He had been ailing since Christmas, when he contracted what appeared to be an attack of influenza, and in February of this year he was complaining of lassitude, loss of appetite, and a cough. On the morning of Feb. 23rd he complained of pain in the liver region, and tenderness was observed over the gall-bladder. Elsewhere the abdomen was flaccid and not tender. A violent attack of abdominal pain began in the late afternoon of the same day, and on this occasion there was marked tenderness over the appendix with slight muscular rigidity. The rest of the abdomen was flaccid. At 8.45 P.M. of the same day the temperature in the axilla was 37° C., the pulse was 72, and there was an increase of the tenderness and rigidity over the appendix. An injection of morphine was given, and Prof. Bier was summoned. It was agreed that an operation should be performed at once, and Ebert was taken to a hospital where he was operated on at midnight. Much cloudy, odourless fluid was found in the peritoneal cavity, and the intestines were seen to be much distended and injected. The appendix, which was very difficult to find, was gangrenous and perforated. For several hours preceding death, which occurred on Feb. 28th, the clinical picture was characterised by intractable intestinal paralysis. At the necropsy the gall-bladder was found to contain calculi, and there were ulcers of the stomach, one of them extending down to its muscular layer. The lining of the small intestine was necrotic in places, and it was probable that the changes in its walls were not altogether recent. Indeed, it seemed that the intestinal paralysis, which contributed so much to the fatal issue, depended not only on the inflammation of the peritoneum, but also on the diseased condition of the mucous lining of the stomach and intestine. The interval between the onset of vague abdominal symptoms and the operation was one of 20 hours, and seven hours between the detection of signs of appendicitis and the operation. One of the many features of this case which is of interest to the surgeon is the liability of a history of recurrent attacks of biliary colic to delay the diagnosis of an acute attack of appendicitis. Passing from this isolated case to generalities it is interesting to note that, as a rule, much greater publicity is given to the causes of death of distinguished persons abroad than in this country. Reticence in such matters is, of course, natural, but there is much to be said in favour of the course taken by the medical advisers of Germany's first President.

[1] Paris Médical, Feb. 21st, 1925.
[2] The World's Health, October, 1924.

CARBOHYDRATE METABOLISM DURING PREGNANCY.

SINCE the introduction of insulin, all alterations in carbohydrate metabolism have received additional attention. Ehrenfest,[1] in a recent article, considers the matter very fully. So long ago as 1895 it was shown by V. Jaksch that 100 g. of glucose taken by mouth would cause a glycosuria in the majority of pregnant women; this amount has no effect on non-pregnant ones, and certain tests for pregnancy are based on this fact. The routine testing of the urine of pregnant women has shown that glycosuria as estimated clinically is not uncommon in these subjects, and the improvement of technique in the estimation of blood-sugar reveals the explanation of this phenomenon, which lies apparently in the lowering of the "renal threshold" for sugar. There are, however, other factors at work. During pregnancy the whole of the endocrine system is in a condition of hyperactivity. The increased activity of the thyroid which has been proved to exist results, according to Olmstead and Gay, in an increased metabolism, a delay in glycogenesis, or augmented glycogenolysis. It is well

[1] Ehrenfest: American Journal of Obstetrics and Gynæcology, December, 1924, vol. viii., No. 6, p. 685.

known, too, that increased activity of the adrenal tissues results in glycogenolysis with a resulting hyperglycæmia and glycosuria. That pregnant women are abnormally sensitive to injections of adrenalin is known, and all evidence suggests that in them the adrenals are in a state of hyperactivity. The difficulty in assessing the action of the ovarian secretions is very great on account of their multiplicity. Some interesting experiments by Kuestner show, however, that a secretion from the ovary of pregnant animals is responsible for a lowering of the sugar tolerance. The increased activity of the pituitary during pregnancy is familiar, and this factor considered alone results again in the lowering of the sugar tolerance. In spite of an alteration in all these factors having a bearing on sugar metabolism, authorities agree that the blood-sugar concentration in healthy pregnant women varies within the normal limits. We must conclude, therefore, that although metabolism takes place on a higher rate, it remains normal. The lowering of the renal threshold for sugar may be a protective mechanism against the effects of hyperglycæmia on the fœtus.

INDUSTRIAL ACCIDENTS AND DISEASES.

A MEDICAL congress, the Fourth International Medical Congress for the Study of Industrial Diseases and Accidents, will be held in Amsterdam in September, commencing on Monday, the 7th, and concluding on the following Saturday. This is the first representative meeting of medical authorities to be held since the war, and so much work has been done in this country along the whole line that we may expect our delegates to play a prominent part in the conference. The President of the Congress is Dr. P. H. van Eden, of Amsterdam, and the British Executive Committee consists of Mr. R. de Marees van Swinderen, the Minister of the Netherlands (Hon. President), Sir Thomas Oliver and Prof. E. L. Collis, as President and Vice-President, respectively, and the following members of Committee: Dr. D. A. Coles, Sir William Collins, Prof. J. Glaister, Sir K. W. Goadby, Sir William Hale-White, Sir Robert Jones, Dr. J. R. Kerr, Dr. A. Mercer, Dr. Howard Mummery, Dr. A. Scott, Dr. Theodore Thompson, Dr. A. Trimble, Dr. H. M. Vernon, Dr. Thomas Watts, M.P., and Dr. R. Prosser White. Dr. C. S. Thomson is Hon. Treasurer, and Dr. H. Menko, 2, Grosvenor-gardens, London, N.W.2, is Hon. Secretary, from whom full particulars may be obtained. It will be seen that the constitution of the Committee warrants the expectation that they will make practical contributions to international wisdom on a difficult subject.

PROF. GUIDO BANTI.

Guido Banti died early in the year, aged 72, at Montebicchière in Florence, the place where he was born and from which he rarely moved. For 35 years he was director of the Institute of Pathological Anatomy in Florence and also physician to the Hospital of Santa Maria Nuova, where he had 150 beds. A retiring man of the true scientific type, he was personally hardly known outside his own country, but Banti's disease has made his name familiar to the whole world of medicine. Two notices of him by former pupils (*La Riforma Medica*, Jan. 28th, and *Rivista Sudamericana di Immunologia*, Feb. 15th) depict a man who was deeply beloved and admired by his students, one who had a great reputation both as a clinician and pathologist, though his outspoken frankness and tendency to regard the patient rather as a scientific problem prevented his being successful as a physician with the public. He was not a voluminous writer, but his published works covered a considerable range of subjects. Almost his first work was on aplasia, in which he tried to enlarge the somewhat narrow teaching of the French school. In 1881–82 there followed contributions on the progressive anæmias and on splenic anæmia; in 1886 one on the bacteriology of cerebral meningitis. His theses on splenic anæmia,[1] in Italian, attracted little attention, but in 1894 he published papers both in French and German journals on splenomegaly with cirrhosis of the liver, which won him recognition as a great clinical observer and has caused his name to be indissolubly associated with that type of the disease. In 1895 he published a short work on endocarditis and nephritis, and in 1902 one on the pathology of the lung. In 1905 there appeared the first numbers of a great work on pathological anatomy, but this, unfortunately, was never completed, partly owing to his having suffered for years from writer's cramp. From 1908–17 he was editor of the *Rivista Patologica Quindicinale*, published at Genoa, and he made no further individual contributions to medicine. It will be seen that Banti's work covered a considerable field. He had a keen, independent, and progressive mind and an immense store of clinical and pathological experience and he was an indefatigable worker. His papers are excellent examples of close reasoning, based on keen observation and great knowledge; they are neither dogmatic nor obsequious to received opinion. There is little doubt that had he written in a language more generally accessible to physicians, he would have attained a much wider reputation, one that would have justified all that his countrymen thought of him.

THE NEW FACTORIES BILL.

IT is an open secret that the prospects of this Bill have been much improved by the stream of steady explanations which has been forthcoming from experts on the subject. Many Members of the House of Commons have taken advantages of opportunities for real comprehension of the views of those who see in the Bill an overdue measure for righting certain manifestly wrong positions, and in this way apprehensions of unduly burdening the factory owners are, we think, being dissipated. At the University of Birmingham this week Miss L. Carbutt, who has acted as a temporary Inspector of Factories, gave a lecture under the auspices of the Y.W.C.A. Industrial Law Bureau, in which she drove home those general points that have been emphasised in the press, while she added an argument of considerable force for reform when she stated that in a large Birmingham factory during the past winter the women had worked throughout every Saturday afternoon, bringing their total work for the week up to 60 hours. The Government can see, therefore, that the legislation which is definitely included in their programme is necessary as well as widely desired.

AS already announced in THE LANCET, an International Congress on Thalasso-Therapeutics will be held at Arcachon from April 22nd to 25th.

THE House and Library of the Royal Society of Medicine, 1, Wimpole-street, London, W., will be closed from Thursday, April 9th, to Tuesday, April 14th, both days inclusive.

AN extraordinary general meeting of the members of the National Council for Combating Venereal Diseases will be held at the Board Room of the Girls' Friendly Society, 39, Victoria-street, London, on Monday next, April 6th, at 4 P.M., to consider and, if thought fit, to pass the following extraordinary resolution: "That the name of the company be changed to the British Social Hygiene Council." Should the resolution be passed by the requisite majority, it will be submitted for confirmation as a special resolution to a second extraordinary general meeting which will be subsequently convened.

[1] Osler and Macrae, first edition, vol. iv., p. 759.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CXVI.—TREATMENT OF ACUTE PERITONITIS.

ACUTE general peritonitis is nearly always, unless it is a terminal condition, the result of a sudden incursion into the peritoneum of infecting organisms from a local source of supply. There are many causes, but by far the great majority of cases will be found to originate in a perforated appendix or a perforated gastric or duodenal ulcer. Less frequent causes are ruptured tubes, ruptured gall-bladder, acute pancreatitis, traumatic perforations—e.g., a kick in the abdomen—and so forth. The main point in the treatment is to establish the diagnosis at once, open the abdomen, stop the leak, and provide for the removal by drainage of the products of the leakage.

Signs of Peritonitis.

The signs of a general infection of the peritoneum are as a rule unmistakable. Rigidity, complete and universal, over the whole abdomen, is enough in itself. More important, because a few hours earlier in onset is the "expression" of the abdomen when it moves. For, contrary to the usual teaching, the peritonitic abdomen is *not* always motionless except in late cases. The movement, however slight, is characteristic.

It is diagnostic in most cases before one puts a hand on the abdomen. A hand on the chest and an eye on the abdomen is the best procedure. In a normal patient the abdomen comes out when the chest comes out (except for the first three or four respiratory movements, which should be ignored because all patients breathe self-consciously when first exposed). If after the first few breaths the abdomen goes in when the chest comes out, then the patient has a diffuse leak, will be found on palpation to have complete rigidity, and on laparotomy to have general peritonitis. It is a most important sign because a perforation may be accompanied by a low pulse-rate (44-48), and when this is combined with a normal temperature and false abdominal movements, it is as though the forces of Nature were conspiring to deceive the unwary diagnostician. It must be distinguished from the "morphinised" abdomen in which the movements are slight but in the normal direction. Moreover, there is a further refinement. If a transverse crease half an inch above the umbilicus is seen in an abdomen which has the reverse movement described above—or no movement at all, then the patient is likely to have a perforated duodenal or gastric ulcer. If, on the other hand, there is a transverse motionless axis about two inches below the umbilicus round which the abdomen "rocks"—i.e., the wall goes in below this axis and out above it—then the trouble is probably in the appendix, which is leaking mainly into the pelvis and less so towards the upper abdomen.

Owing to duodenal leakings coursing down over the right iliac fossa, duodenal perforations and ruptured appendixes are often identical in abdominal "expression" and rigidity. Vomiting is against gastric or duodenal ulcer and in favour of appendicitis. High temperature early is against both. But since diffuse rigidity tells us that a suprapubic drain will be required, a useful plan is to make a small suprapubic incision first and see what kind of fluid escapes. Pus which smells suggests appendicitis; pus without smell suggests a perforated gastric or duodenal ulcer; blood, an ectopic gestation, or pancreatitis. The next step is to stop the leak. Duodenal and gastric ulcers can nearly always be felt before they are seen, and the bubbles and turbid fluid will lead to the right direction. The ulcer should be boldly inverted, going through all coats with, for choice, floss silk. The second row of inverting sutures can be and should be catgut.

Drainage.

If the lesion is appendicitis the appendix should be removed, the stump inverted, and suprapubic drainage provided. This may be of glass or rubber. If of glass, which I prefer, it should be long rather than wide, and should settle down firmly in the pouch of Douglas so that its deep end cannot be moved by pushing the superficial end backwards, forwards, or from side to side. The feel of a "set" suprapubic tube is characteristic, and it will not be displaced by the patient's movements. Care should be taken that there is not a coil of small intestine between the tube and the rectovesical pouch. The average time to leave it in is 1½ to 2 days, but if any doubt exists a smaller rubber tube should be pushed down the glass tube *before* removing the latter, and in any case the tube should be rotated round its own axis within 24 hours to prevent omentum growing into the holes.

It is the practice of many surgeons to sew up these cases without drainage. Personally, I have never seen a suprapubic tube—properly managed—do any harm, and I believe that occasionally a case can be saved through providing drainage. Speed is an important factor in these operations.

The treatment of the extravasated contents and turbid fluid or pus has been much discussed. Most surgeons are now of opinion that it should not be wiped or washed. Lymph should not be picked off; it is protective. The function of the peritoneum is, in fact, to have peritonitis if necessary. Incidentally the use of packs in diffuse peritonitis is to be deprecated. They waste time and they rub the peritoneum, both things to be avoided.

The Fowler Position.

Suprapubic drainage is based on the fact that while we cannot drain the whole peritoneum we can at least put a tube into a place towards which we can coax the fluid to run by the position of the patient. This is the basic idea of the Fowler position. No excuse about the patient having "just slipped down" should be accepted. The angle should not be extreme but should be constant; there are many methods for maintaining the position. I used at one time pieces of wood triangular in section and the length of the width of a bed. The three sides of the triangle were *unequal*, so that one side could always be found to match the patient's thigh. One of these was put underneath the mattress and fixed. The aim is to produce by this or another method combined with a back-rest a large V into which the patient sits. I gather from the angle at which Murphy bends the rectal tube that the angle preferred by him is an exaggeration of the Fowler position. Experiments on the cadaver suggest that an angle of 45 degrees is enough to drain the whole of the peritoneal cavity; but this may not be applicable to the living. The patient should be put in the Fowler position while waiting for operation. Further, when he has to be moved to a home or hospital an ordinary motor-car is better than an ambulance because he cannot lie down in it.

After operation the patient's whole lymphatic system should be flushed with fluid in order to help the excretion of the toxins through the peritoneum. Rectal salines by the continuous method or by repeated injection are the most valuable. These can be supplemented or replaced, if the rectum is intolerant, by subcutaneous salines into the chest, rather than the thighs, which are too near the drainage-tube and liable to suppurate. As much fluid as possible should be given short of waterlogging the patient, and plenty of fluid may be given by the mouth even if the patient vomits.

Purgatives.

Purgatives after operation are open to discussion, but I always give 3 gr. of calomel 24 hours after

operation—all in one dose so that if the patient vomits it can be given again without working out minute fractions. This is followed, in rapid succession until the bowels act, by mist. alb., a turpentine enema, pituitary extract, and eserine. The two latter seem to act on different types of cases, but it is difficult to prophesy.

My object in giving purgatives is not that I think people recover from peritonitis by having their bowels moved, but, first, because any distension hampers chest movements and increases the liability to bronchitis, and, secondly, because I want to know early if the patient is going to have post-operative paresis of intestines or not. An enterostomy may save him on the third day, but will probably be credited with having killed him if done on the fourth day. Lastly, I believe if the bowels are kept mildly wriggling for a few days after operation it prevents a thin film of lymph attaching one piece of gut to another from becoming a permanent organic adhesion and thus causing obstruction in a week or two.

Special Cases.

With regard to special cases, the question of doing a gastro-enterostomy at the time of perforation of an ulcer can only be decided by experience. Those surgeons who always do it appear to me to be wrong, and those who never do it equally wrong. It depends on a rapid summation of the following facts. If the number of 'years' history of ulcer is large, a gastro-enterostomy is indicated since mere suture is not likely to cure. If the number of hours since perforation is large, a gastro-enterostomy is not indicated since the toxæmia is great and operation should be as short as possible. If the number of minutes it takes the particular surgeon to do it is large, a gastro-enterostomy is not indicated. The fourth factor concerns the degree of stenosis produced by inverting the ulcer. This, I would point out, is never so extreme as one would think, from the peritoneal view of the pylorus or duodenum, and is only occasionally, by itself, an imperative indication for a gastro-enterostomy at the time of perforation.

Remote complications are, of course, bronchitis, pleurisy, and above all subphrenic abscess. Localised abscesses must be looked for as hard tender spots, and should be opened. The later they appear the safer it is to wait until they are localised.

Another complication which may supervene from 10 days onwards is a band forming as a result of the infection in the peritoneum. Persistent vomiting with a rhythmic pain and painless intervals is the best sign of this condition. Rarely have I noticed visible peristalsis under 11 days. The site of the band is fairly constant—it ties down the terminal ileum about two feet from the ileo-cæcal valve, and is due to this coil lying in the pelvis, the last part of the peritoneum to be freed from infection and, moreover, the site of the drain. The adhesion can usually be flicked off with a finger, and if operation is performed early nothing more need be done.

Conclusion.

It should be remembered that the four factors—early and quick operation, suprapubic drainage, Fowler position, and the administration of salines—have altered during the last 20 years the mortality of general peritonitis from over 80 per cent. to less than 20 per cent.

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SHENLEY MENTAL HOSPITAL.—A new mental hospital for the County of Middlesex is to be erected at Shenley. It is to be on a modified villa system and will accommodate 2000 patients. In addition to the villas there will be enclosed buildings for 500 patients who are unfit to associate with the better type, and four buildings for about 270 sick and infirm.

Special Articles.

PRESERVATIVES IN FOOD.

BY REGINALD DUDFIELD, O.B.E., M.B., D.P.H.,
MEDICAL OFFICER OF HEALTH, PADDINGTON.

THE communications which have appeared in the daily press since the issue of the Draft Regulations relating to the use of preservatives and colouring matters in foods make it desirable to inquire whether there be any statistical evidence indicating that harm has resulted from the use of what may be termed medicated foods. Many who have studied the question as a whole have strong suspicions that the use of chemical preservatives not only introduces risks of general accumulations of drugs in the system but also so interferes with the processes of digestion resulting in irritation of the intestinal mucous membranes, due to the presence in the digestive tube of foods which are not completely digested; these are then passed to lower parts of the tube not physiologically fitted to deal with foodstuffs in that condition.

It seems certain on first inspection that indications of increasing morbidity of the digestive tract—and more especially of the digestive tube—are to be found in the table of fatal cases of peritonitis, of gastric and duodenal ulcers, and of perityphlitis and appendicitis observed at Guy's Hospital during the 40 years 1880–1919.[1] Comparing the deaths of the first quinquennium (1880–84), when there was not a single death from either gastric or duodenal ulcer, with those of the last (1915–19), the latter show an increase of 168 per cent.

If the "irritation" theory of cancer, using that term in its loosest sense, be accepted, the mortality rates from cancer should yield at least a suggestion of the ill-effects of medicated foods, supposing that such medication interferes with digestion. The mean rates (Table I.) for the six decennia, ending 1910, have been taken from the Supplement

TABLE I.—*Cancer: Annual Mortality per Million.*

	P.	M.	F.		P.	M.	F.
1851–60 ..	326	207	440	1881–90 ..	610	465	739
1861–70 ..	396	255	522	1891–1900	767	639	882
1871–80 ..	484	333	619	1901–10 ..	867	784	942

P. = Persons. M. = Males. F. = Females.

to the Seventy-fifth Annual Report of the Registrar-General (Pt. III., p. ccviii.). The index numbers for the total (persons) mortality rates are shown in Table II.

TABLE II.—*Index Numbers: Persons.*

1851–60–100 : 1861–70–121 : 1871–80–148
1881–90–187 : 1891–1900–235 : 1901–10–266.

During the second and third decennia the increases in the mortality were 21 and 27 per cent., but in the fourth (1881–90) there was a sudden rise to 39 per cent.—the increase being taken by differencing each successive pairs of numbers. The use of drugs as preservatives of foods began somewhere between 1880 and 1885, and the two sets of figures here given show increases in morbidity (in the one case) and in mortality (in the other) roughly coinciding with the inception of the practice.

The earliest distribution of deaths from cancer according to the sites of the disease appears to have been made in 1901. At any rate, search for tables of distribution by sites, made in the Supplements to the Annual Reports of the Registrar-General, has led to the finding of two decennial tables only, one for 1901–10[2] and the other for 1911–20.[3] In the former

[1] Proc. Roy. Soc. Med. (Section of Medicine), xvi., 45.
[2] Ann. Rept., 1910, p. lxii.
[3] Ibid., 1921, p. 62.

decennium there were 309,141 deaths from cancer—127,807 of males and 181,334 of females—and in the latter 400,374 deaths—175,871 of males and 224,503 of females. The numbers in the second decennium (1911–20) show increases of 23 per cent. for persons, 38 for males and 24 for females.

The deaths from cancer of the intestinal tube during the two decennia were as given in Table III. The numbers recorded during the second period show the increases (per cent.) over those for the first given in Table IV. It will be seen that in all instances the proportional increases were greater than those noted for the total mortality from cancer. These figures naturally suggest that the proportions of the deaths from cancer situated in the intestinal tube, expressed as percentages of the total numbers of deaths from cancer, have increased. The actual changes are shown in Table V. Table V. can be extended to 1922, the last year for which any statistics are available.

TABLE III.—*Cancer: Deaths Recorded.*

	1901–10.			1911–20.		
	P.	M.	F.	P.	M.	F.
(1)	53,138	27,324	25,814	69,760	36,833	32,927
(2)	24,391	10,322	14,069	44,877	18,903	25,974
(3)	23,782	12,963	10,819	32,304	18,297	14,007
Totals	101,311	50,609	50,702	146,941	74,033	72,908

(1) Stomach. (2) Intestine. (3) Rectum.

TABLE IV.—*Cancer: Percentage Increases, 1911–20.*

	Persons.	Males.	Females.
Stomach	31	35	27
Intestine	84	83	84
Rectum	36	41	29
Totals	45	46	44

TABLE V.—*Cancer: Ratios (Per Cent.) of Deaths to Total Deaths from Cancer.*

	1901–10.			1911–20.		
	P.	M.	F.	P.	M.	F.
(1)	17·1	21·3	14·2	17·4	20·9	14·6
(2)	7·8	8·0	7·7	10·2	10·7	11·5
(3)	7·6	10·1	5·9	8·0	10·4	6·2
Totals	32·7	39·5	27·9	36·6	42·1	32·4

	1921.			1922.		
	P.	M.	F.	P.	M.	F.
(1)	17·6	21·4	14·6	18·3	21·6	15·5
(2)	12·0	11·4	12·5	12·0	11·8	12·2
(3)	8·3	10·6	6·5	7·9	10·2	6·1
Totals	38·0	43·4	33·6	38·3	43·6	33·9

(1) Stomach. (2) Intestine. (3) Rectum.

The foregoing statistics indicate very clearly that since 1901 there has been a distinct increase in the mortality due to cancer of the intestinal tube and that the deaths due to cancer in those parts have increased proportionately more than the general mortality from this disease. The statistics submitted—admittedly incomplete—do appear to support the conclusions of the Departmental Committee as to the necessity of regulating the use of preservatives in foods. Indeed, the figures may be said to point to the desirableness of entirely prohibiting the use of drugs as preservatives.

A HOSPITAL AT HAYWARDS HEATH.—At the annual meeting of the governors of the King Edward VII. Memorial Eliot Hospital, Haywards Heath, on Feb. 19th, it was announced that the governors had decided to purchase the field adjoining the institution for £2000, and that Mr. and Mrs. S. L. Powell had given half of the required sum. It was explained that more room was urgently needed at the hospital, and the governors had realised the necessity of a nurses' home. Mr. Powell was re-elected president. During 1924 305 cases were treated in the hospital, an increase of 31 compared with the year 1923; 167 operations were performed and 119 accident cases admitted, increases of 11 and 9 respectively; 372 treatments had been effected in the X ray department and 319 photographs taken, and in the massage department 3514 treatments had been made. The accounts showed a balance in hand of £100 5s. 5d. on the year's working.

PROCEEDINGS OF THE ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE.*

(*Continued from p. 679.*)

EVIDENCE OF THE NATIONAL CONFERENCE OF INDUSTRIAL ASSURANCE APPROVED SOCIETIES.

(App. VI., 1 and 2.) The societies associated with the National Conference in the administration of National Health Insurance include, amongst others, the Liverpool Victoria, the National Amalgamated, the Royal Liver, and the Prudential Approved Societies. The number of insured persons who are members of the associated societies is over 6½ millions, of whom about 3½ millions are men and 3 millions women.

Home Service.

(App. VI., 5–8.) The membership of these societies consists in the main of those persons not previously associated with friendly societies. The benefits are paid and the contribution cards distributed and collected by means of the agency staffs of the various societies within the Conference, constituting an organisation which effectively covers practically every town and village in the United Kingdom. It is claimed for this "home service" that it is of great assistance to the insured persons, who are kept informed as to their position in insurance.

Getting the Act Started.

Evidence on behalf of the Conference was given by Sir Thomas Neill, Mr. E. F. Spurgeon, and Mr. E. T. Palmer. (Q. 4432.) They said that at the outset the Government of the day made an appeal to the Industrial societies to assist in making the National Health Insurance Act effective, and that it was generally conceded that but for that assistance the Act might have broken down at the time of its inception, having regard to the contentious atmosphere in which it was born.

(Q. 4436.) Competition amongst the Industrial group in the sense of trying to take each other's members, or to take members from other societies, is very much deprecated by the society managers.

Democratic Control.

(Q. 4442–4743.) An inquiry as to how societies in this group give effect to the requirements of the Act that Approved Societies should be under the absolute control of their members led to a lengthy examination on this question. Sir Thomas Neill contended that societies were so hedged round with regulations that they were left with little discretionary control. He agreed, however, on examination that there were many matters upon which managerial decisions must be taken in regard to which the members might exercise control if this were practicable.

The provisions in the rules enabling members to turn out the Committee of Management if they were dissatisfied contain the necessary elements of control by the members. If they did not turn up in large numbers at the meetings this seemed to betoken satisfaction on their part. In the National Amalgamated, 50 members, including the Committee of Management, formed a quorum, although the total membership of the society was 2,000,000. Special district meetings might be called to express dis-

* In previous articles the proceedings of the Commission were reported under the following headings: Introductory Note; The Scope of the Insurance Scheme (see THE LANCET, Jan. 31st, pp. 247–8); The Provision of Medical Benefit (Feb. 7th, pp. 301–3; Feb. 14th, pp. 355–6; Feb. 21st, pp. 403–5); Financial Provisions of the Act (Feb. 28th, pp. 454–7); Medical Certification and the Regional Medical Staff (March 7th, pp. 508–9); The Approved Societies and the Money Benefits (March 14th, pp. 564–5; March 21st, pp. 623–4); Evidence of the Hearts of Oak Society (March 28th, pp. 677–9).

References to the official statement which has been issued as an appendix in four sections are given thus; Section A, para. 69, is shown as "App. A. 69," and references to the oral evidence thus—Q. 1369.

satisfaction. In this case the quorum required by some rules is one-third of the members in the district. This led to the following interesting questions :—

(Q. 4724–5.) When it comes to a matter of policy which is perhaps critical of the management, and we look at what is . . . a critical part of the machinery whereby insured persons give effect to their control of the Society, you require a quorum not of 50, but a quorum in Manchester of 21,000, in Birmingham of 17,000, in Lancashire of 30,000, and all the rest of it. It is a physical impossibility, is it not ?—It is.

Q. So that the machinery for self-government breaks down there ?—Evidently it does.

Spreading the Insurance Risk.

(Q. 4934–7, 4990.) The witnesses thought that the societies should not suffer by the segregation of people employed in hazardous occupations. Combinations of smaller societies seemed desirable and a group with 100,000 members was probably necessary to get a fair average of sickness experience. (App. VI., 14.) The Conference were of opinion that a scheme ought to be devised under which the Approved Societies should absorb the whole of the Deposit Contributor class.

Married Women.

(Q. 5098. App. VI., 15, 16.) Insured women on marriage should be allowed to accept a bonus and terminate their contract of insurance. There was no particular demand for this from the women themselves, but the present insurance provisions were inconvenient and wasteful in administration.

Medical Benefit.

(App. VI., 17–19.) The Conference recommended that attendance at confinements, if so required by the insured person, and at illnesses arising therefrom, be included in the contract of service of insurance practitioners, a prescribed sum for such service being paid to the practitioner from the maternity benefit due to the insured person from his or her society. Apart from this and possibly (Q. 5118) grant of medical attendance to the wives of insured members, no general extension of medical benefit was suggested, but in the event of any material change in the character or cost of medical benefit being recommended to the Royal Commission, the Conference asked to be allowed to submit its views thereon.

A Fair Run for the Panel Doctor.

On the subject of the medical service for the insured, Sir Thomas Neill said that he did not wish to make any general criticism.

(Q. 5121.) Even in the case of dignitaries of the Church and elsewhere you find there is a great deal of attention drawn to the wrongdoings of individuals. It is the same with medical service. There have no doubt been quite a lot of men who have had no regard to their obligations, but I think the medical profession and the Insurance Committees are dealing with this.

The medical service has not had a chance to function peacefully until 6 or 12 months ago, when the last arrangement was made with the medical profession.

I do not think we have had a fair run with the present panel practice in peace and quietness to see really what it will do under these new regulations, and I would not be inclined to advocate it being extended for the present.

Specialist Services.

(Q. 5227–33.) The witness deprecated extensions in the way of specialist services at the present time, though he thought that in a few years the "top of the profession" should be available "for everybody."

Dental Benefit.

(App. VI., 22.) The Conference accepted the view "so widely held" that a measure of dental treatment should be available to all members of Approved Societies. The scale of fees and the character of the dental service should be negotiated by a special committee representing the Ministry and Approved Societies on the one hand and the dental profession on the other. It was suggested that ½*d.* out of every contribution should be credited to a central fund, and that this fund, after meeting certain charges, should be distributed to societies for the purpose of providing as a first charge dental treatment on a uniform basis throughout the country. This proposal appears from the evidence to be merely a means of avoiding a pooling of any part of the societies' surpluses. (Q. 5302.) The witnesses said that while they objected to raiding surpluses, there was not the same objection to anticipating a surplus. Sir Alfred Watson asked :—

(Q. 5291.) I want to know why all that elaborate financial structure is required, seeing that all you are after, so far as my ability enables me to judge, is a clause or series of clauses in the Act creating the right to statutory dental benefit, and imposing on all societies the obligation to administer it and to pay for it out of their funds ?

The answer to this question was elaborate but a little unconvincing. As to the extent of the benefit, it was suggested in the evidence that ½*d.* per contribution would provide a sufficient fund to pay bills in full up to the first £ and 50 per cent. of the remainder.

(Q. 5398–9.) The witnesses objected to the proposed dental service being handed over to the local health authority. Sir Thomas Neill said :—

As far as these people who are specially paying for this treatment are concerned, I hope this Royal Commission will not suggest that they should be dealt with in the same way as the tuberculous insured who are not being properly attended to ; nor in the same way as the blind people who should be provided for under the Blind Persons Act, and who are not being properly attended to.

Insurance Committees.

(Q. 5448–9.) The Conference which the witnesses represented are in favour of maintaining Insurance Committees as at present constituted, and with their existing duties, but they were not in favour of entrusting them with additional duties.

EVIDENCE OF THE MANCHESTER UNITY APPROVED SOCIETY.

Evidence was given on behalf of this society by Mr. Edwin Heather.

(App. VII., 4–23.) The Manchester Unity Friendly Society was established in 1810. This Approved Society is the largest of the affiliated orders administering National Health Insurance. The Manchester Unity is governed by the members themselves formed into branches called Lodges. Every member has an opportunity of taking part in the administration of the affairs of Lodge, District, and Order. He may pass through the various offices of Lodge and District, he may be a deputy to the Annual Movable Conference, and has opportunities of attaining the highest position in the society. The society claim that the system creates self-dependence, builds up character, teaches mutual responsibility, fosters the cultivation of fraternal principles, and is therefore a great national asset. It is working well and efficiently. (Q. 5466–8.) There are 3500 Lodges in the society and the average membership for each Lodge is about 250.

(Q. 5497.) The number of members who pay for extra benefits on the private side as well as being State insured is nearly half a million. (Q. 5525.) Those who are State insured only do not display much interest in the work. They have joined the Manchester Unity just as they might have gone to an Insurance Company and taken out a policy.

(Q. 5486–7.) The witness said on behalf of the Board of Directors that they were treated with every consideration by the Ministry of Health, and he dissociated himself from the opinion implied by the words of the late Grand Master at the last annual meeting, when he said "We do not intend to become mere vassals of arrogant bureaucracy."

The Value of Voluntary Thrift.

(Q. 5578–91.) The witness emphasised the value of voluntary thrift. For this reason he deprecated any

increase of the cash benefits under the National Health Insurance scheme. The society wished to provide for this by voluntary thrift because they thought it a valuable thing to the nation as a whole. (Q. 5759.) The compulsory character of National Health Insurance explained the lack of interest which members showed in the working of the scheme.

The Importance of Non-Cash Benefits.

(App. VII., 49.) The society state that there is a growing feeling that future surplus should be used in a greater degree for the provision of non-cash benefits rather than be applied to an additional few shillings per week as an additional sickness benefit which does not to any degree reflect itself in the restoration to good health.

Extension of Panel Service.

(Q. 5794–7.) The witness's personal opinion was that the treatment given by panel doctors is, generally speaking, of a satisfactory nature and that it compares favourably with that given to members of the society before the days of National Health Insurance.

(App. VII., 59–61.) The Manchester Unity are of opinion that the panel system should be continued and extended to include consultant and specialist services, the additional cost being met out of present contributions. (Q. 5831.) Until full arrangements with specialists are possible, it was suggested that these services should be arranged through the voluntary hospitals on a special scale of fees to be paid to the hospital.

Dental Treatment.

(App. VII., 53–8.) There is a considerable demand for this benefit and the society suggested that it should be one of the statutory benefits of the Act. Defective teeth are a predisposing cause of many diseases, and the provision of dental treatment would tend to lessen the other claims on the society.

(Q. 5779, 5800.) Though in general opposed to pooling of surpluses, the Manchester Unity for the purpose of this particular benefit agree to the principle of the strong helping the weak. If the benefit were not made a statutory one, the witness said they were prepared to make it uniform throughout their own society by means of a central fund to which all the Lodges would contribute.

Marriage Bonus.

(Q. 5846.) The Manchester Unity are opposed to a marriage bonus, mainly on the ground that if once conceded it would be difficult to refuse a bonus to other persons going out of insurance.

(App. VII., 63.) They propose that one year's free insurance should be granted to married women on ceasing insurable employment.

Sickness Benefit from the First Day.

(Q. 5894.) The society recommend that sickness benefit should be paid from the first day of incapacity instead of, as at present, the fourth day. This is done on the private side and causes no difficulty.

We recognise that it would, in the first instance, be an increased charge on the benefit fund, but we think it would subsequently mean a reduction of the charges for sickness benefit as it would prevent many cases of prolonged illness.

NEW HOSPITAL FOR DARLINGTON.—The pressure upon Darlington General Hospital (107 beds) has become so severe that a new War Memorial Hospital is to be built upon a site of 17 acres. There will be 229 beds and the cost will be £185,000. The complete scheme, to be carried out eventually at a cost of £232,000, will provide for 299 beds.

HOSPITAL BEDS FROM "SILVER PAPER."—It is stated that four beds in London hospitals have recently been endowed by the sale of the tinfoil or "silver paper" used for putting up tea, chocolate, tobacco, and cigarettes. It is understood that it is used for making solder, and 85 tons of it have realised £1250. The Ancient Order of Druids Tinfoil Fund, through its lodges all over the country, collects the paper and gives the proceeds to the local and London hospitals.

MEDICINE AND THE LAW.

THE FAILURE OF A CLAIM ALLEGING NEGLIGENCE.

THE Lord Chief Justice, with a special jury, recently tried an action in which Mr. W. Gray and his wife sued Dr. W. E. Peacock for damages for alleged negligence in treating Mrs. Gray during her confinement, Dr. Peacock counter-claiming for his fees. After three days' trial a verdict was found for Dr. Peacock and judgment was entered for him on the claim and the counter-claim, with costs.

On March 26th, 1923, Mrs. Gray, who had engaged Dr. Peacock to attend her in her confinement, was stated to have had signs of labour at 2 A.M., and felt the first real labour pains at 8 A.M., but to have experienced no serious pains during the day. Dr. Peacock was present at 10 A.M. and at 7 P.M., and at 8.30 P.M. attended in response to a telephone call, the pains having become serious at 8 P.M. With reference to the delivery, which was completed at 9.50, a question arose at the trial as to whether Dr. Peacock's offer "to help her" was understood by Mr. and Mrs. Gray to refer to the use of the forceps; but in any case he administered chloroform and used forceps, with the result that a male child was born, who is now strong and healthy. Rupture of the perineum took place, and Mr. Gray went out and obtained gut and needles for Dr. Peacock's use, as he was without them. It was stated that the adequacy of the gut was questioned by Dr. Peacock before he used it. The after-birth was left and removed under chloroform at 8 o'clock next morning by Dr. Peacock and Mr. R. M. Rowe. On March 31st the stitches gave way, and were not renewed until May 17th, when the patient had been taken to a nursing home, where she was operated on by Dr. F. J. McCann and Dr. E. Burnet. The plaintiffs' claim included £220 for expenses of treatment and convalescence thus incurred, and it was agreed that the counter-claim for medical fees should abide the issue on the claim. The principal points relied on in support of the claim, as to which interesting expert evidence was given, were the use of mechanical means of delivery at the stage at which they were employed, delay in removing the after-birth, and the suture of the perineum and its failure, including alleged undue delay in attending to the case after the stitches had given way.

Dr. Burnet said in evidence that an after-birth should never be left without removal for more than an hour, and that in no circumstances should the mother be left until it had come away. The medical attendant should come prepared for all contingencies such as a tear. In the case of a perineal tear of the third degree, a reparative operation should be performed immediately after the conclusion of the third stage of labour. In his opinion, there was no justification for the damage done or for leaving it without repair. He ascribed Mrs. Gray's condition to precipitancy in delivery, but not to delay in removing the after-birth. The fact, however, that the after-birth came away safely next morning did not justify the fact of its having been left. He had not himself attended a confinement for about ten years. Dr. McCann stated that when he performed the operation on Mrs. Gray on May 17th the matter was urgent. He was inclined to the opinion that it might have been performed on May 11th when he first saw her, but could not say positively that it might have been performed earlier. It seemed to him extraordinary that with severe pains not before 8 P.M. the forceps should have been used at 9.30. He agreed, in cross-examination, that Dr. Peacock's record of long practice without the loss of a child and with no case of sepsis was a fine one, and that such a man on the spot should be the best judge as to the use of forceps. He admitted that though, personally, he held the opinion that where the stitches in a perineal tear had

given way an operation should take place as soon as possible, other medical men thought that it should be delayed, even for three months. A practitioner acting on the latter view would not be failing to take reasonable care. Mrs. Gray's condition was due, in his opinion, to the use of the forceps, but he was not prepared to say merely because the forceps had been used that its use was improper. Dr. W. E. Falconar expressed the opinion that if Mrs. Gray's own account of her condition were assumed to be true there was no such exhaustion on her part as would justify the use of the forceps.

For the defence Mr. A. W. Bourne gave evidence, and in answer to Lord Hewart said that the use of the forceps must depend upon the patient's symptoms and the condition of the child, and not on "the hands of the clock." Dr. L. Phillips expressed agreement with Dr. Bourne's evidence. Mr. V. Bonney, who had known Dr. Peacock for 20 years, gave evidence that it was not improper to use forceps an hour after the beginning of the second stage of labour. In a woman who had had nothing to eat all day exhaustion might result in nature refusing to do its work. Perineal tears did not prove precipitancy, and proper use of the forceps might minimise it. If first sutures broke down he always waited six months before a further operation, in order to avoid sepsis. The defendant, Dr. Peacock, said that he had been for 30 years in practice without any case of sepsis or loss of a child. He described Mrs. Gray's condition before and at her confinement. He stated that owing to her exhausted state he used forceps, and owing to her exhaustion and the danger of sepsis he left the after-birth unremoved. He had no reason to hurry the confinement and did not do so. He postponed repairing the broken-down suture because it was his practice to do so for at least three months. He was still satisfied with the result of Mrs. Gray's confinement. Nurse E. Ferry said that Mrs. Gray was rather frail and was very nervous before her confinement; on the day on which it took place she had been unable to take food; it was a very difficult birth and Mrs. Gray was exhausted. Mr. Rowe, who saw Mrs. Gray on the morning after her confinement, considered that events had justified Dr. Peacock's treatment of the case. When summing up the evidence, after counsel had addressed the jury, Lord Hewart said the question for the jury was whether or not Dr. Peacock had used reasonable care and was justified in using forceps, and if not whether Mrs. Gray's injuries were the result of his use of instruments and of his negligence. The jury, as has been stated, found a verdict for the defendant, who is to be congratulated upon a just verdict after a full and fair setting out of the arguments. The defence was conducted by Messrs. Hempsons on behalf of the Medical Defence Union.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

National Health Insurance Bill.

THE proposed Bill dealing with national health insurance (les assurances sociales) is causing lively apprehension for the future of medicine among the medical profession of France. Dr. Weiss, dean of the Medical Faculty of Strasburg, recently read a communication to the Academy of Medicine in which he described the results of the working of the system in Alsace and in Lorraine in so far as it affected the medical profession, showing how such apprehension was justified. In fact, Dr. Weiss held that the independence and the dignity of the doctor had been lowered, that the science of treatment had been debased, and that medical teaching had been compromised. The leader in the present movement against the system of health insurance is Dr. Balthazard, professor of forensic medicine at the Medical Faculty of Paris. He maintains that the proposed Bill, which is at the moment being investigated by the Senate through a Hygiene Commission, must be remodelled in such a way as to retain a certain proportion of the principles on which the reputation and high standing of present-day French medicine is based, and he is anxious that the Academy of Medicine should pass the following resolution: That, in order to avoid a set-back in medical progress, the law dealing with health insurance must respect the following principles, which are essential for the maintenance of the best traditions of French medical service, and which, if neglected, would preclude the profession from loyally upholding the law: 1. Free choice of doctor for the insured, and direct relationship between the doctor and the insured, without the interposition of clubs (caisses). 2. Absolute respect for medical secrecy. 3. Control of the insured to be in the hands of the clubs, the medical attendant acting solely in the interests of his patient. 4. Obligation on the part of the clubs to make use of the hospital organisation of towns which possess a medical faculty or a school of medicine, hospital fees being fixed by an arbitration commission.

Prophylaxis Against Tubercle.

Dr. Léon Bernard, professor of hygiene at the Faculty of Medicine of Paris, recently demonstrated before the Academy of Medicine the excellent results obtained in the prophylaxis against tubercle in young children by separating them from tuberculous parents and boarding them out (placement familial). The figures he quoted were based on five years' observation of children who had been kept free of the disease through the system of ante- and post-natal prophylaxis which he, along with Dr. Robert Debré and Dr. Marcel Lelong, had instigated and organised. Of 265 infants of tuberculous parentage who were removed from their families before any infection had taken place, all showed a period of retarded growth up to the age of 18 months and then became quite normal, both in regard to weight and powers of resisting infection. The resistance to the tubercle bacillus was particularly noticeable, for with one exception all the infants escaped later accidental infection. The mortality was relatively high in the first month of life, but after three months it was 5·7 per cent., a normal figure. Among 171 infants removed from a tuberculous milieu when already infected there was a certain amount of malnutrition during the first year, but at the end of 18 months body-weight and powers of resistance to infection were normal. The mortality from secondary tuberculosis was 7·6 per cent. Dr. Bernard also conducted an inquiry into the cases of infants who had either been refused boarding-out facilities or whose parents had refused to allow the separation. Out of 66 cases traced, 54—or 82 per cent.—had died, that is a mortality of 82 per cent. compared to 7·6 per cent. among boarded-out infants. These results show the prophylactic value of separation in combating tuberculosis where the infants are removed from a source of contagion.

An Accident with an Electric Iron.

Prof. Zimmern, of Paris, recently had to deal with a case where the patient had suffered severe injury through an accident arising out of the use of an ordinary domestic electric iron. The iron was connected to the house current of 220 volts. The victim, a woman, finding that the iron was not getting hot, took it up in her hand, and noticing that a screw was loose near the heel of the apparatus began to tighten it with her right hand, while with her left she grasped the ironing surface. The current was thus short-circuited through her body, and produced such a violent contraction of the flexor muscles of the forearm and of the elevating muscles of the shoulder that her left wrist was broken. In addition she sustained burns of the third degree on her fingers, and later she suffered intense pain in both shoulders, due apparently to injury to the nerves.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

A Berlin "Health Week."

HYGIENE propaganda on a large scale was recently carried out on behalf of the city authority in Berlin during the week from March 16th to the 21st. The "Health Week" was opened by a meeting in the town hall, where addresses were delivered by the mayor, the director of the municipal health office, and representatives of the medical faculty of the university and of the medical profession. A well-known hygienist, Prof. Drigalski, praised the work of the medical profession in the prophylaxis of epidemics and the improvement of the hygienic condition of the city. He stated that neither during the war nor afterwards had any appeal to the profession been made in vain, and that no other profession had done so much for the public welfare without remuneration as had the medical profession. During the week films on hygienic matters were shown in a great number of cinemas, and in every district of the town lectures were delivered by the district medical officers and other medical men on tuberculosis, infectious and venereal diseases, infant mortality, and analogous subjects. The lectures were attended by about 50,000 people. In the municipal schools the children were instructed by the teaching staff and by medical men on the importance of hygiene. Pamphlets were distributed free of charge throughout the city and the suburbs. The "Health Week" proved a success.

Meeting of Cancer Committee.

The Cancer Committee some time ago held a jubilee meeting together with the Berlin Medical Society. The meeting was honoured by the presence of the late President of the German Republic—his last attendance at a public meeting before his fatal illness. Lectures were delivered by Prof. Warburg on the metabolism of the cancer cell, and by Prof. Lubarsch on the history of cancer research during the past 25 years. Prof. Blumenthal, head of the cancer department of the Charité Hospital, spoke on the treatment of cancer by modern methods, mentioning that, apart from Rontgen rays and of radium, injections of thorium had proved successful. He suggested that he had been able to cultivate bacteria from cancer in human subjects. In 16 cases three different species of bacteria were found which on inoculation into animals produced new growths, which could be re-inoculated in animals of the same species and become ulcerous like cancer. To develop the growth, however, not only inoculation of the bacteria, but also addition of an irritant was necessary, infusorial earth having been chosen for that purpose.

A Wax Candle in the Bladder.

Before the Medical Society of Cologne Dr. Goldberg described the case of a patient who had introduced a small wax candle in the urethra. The candle unfortunately glided into the bladder, producing there hæmorrhagic purulent cystitis. After cystoscopy, to ascertain the presence and the position of the candle, Dr. Goldberg tried to remove it by a lithotriptor, but this proved impossible. He therefore made an injection of 50 g. of lukewarm benzine into the bladder, the result being that the wax was melted and could be drawn out together with the benzine by an evacuator. When the benzine had evaporated it was ascertained that the weight of the removed wax was equal to that of the candle, and that therefore no part of the candle had been left within the bladder.

Death from the Administration of X Rays.

The chief surgeon to a hospital in Dresden, his assistant surgeon, and a nurse were prosecuted recently on the allegation that they had caused the death of two women by the administration of X rays. The patients were suffering from cancer and they had applied the rays in high doses without using a safety filter. Severe burns were caused and death finally occurred. By post-mortem examination it was ascertained that the deaths had in fact been caused by the treatment. Expert evidence was given for the prosecution and for the defence. The court found a verdict of guilty of manslaughter by neglect. The assistant surgeon and the nurse were sentenced to two months' and one month's imprisonment respectively, being, however, allowed a postponement of the sentence upon bail. The chief surgeon of the hospital was fined severely, because, although not having been himself actively concerned in the treatment, he had neglected to supervise the work of his assistant and the nurse.

Responsibility of an Asylum.

A mentally afflicted man interned in an asylum begot a child with a nurse of the asylum. The nurse therefore brought an action for alimony against the patient and obtained a judgment for herself. The patient thereupon brought an action against the asylum to recover the costs, because they were responsible for not having sufficiently guarded him as was their duty. The court found against the asylum. The High Court of Justice, however, on appeal, cancelled the first judgment, stating that the asylum had neglected their duty by not selecting specially trustworthy nurses for a man who had been confined partly on account of his excessive sexual desires; on the other hand, it was decided that the patient had not totally lost his free-will by his mental disturbance. The asylum therefore had only to pay a part of the damages.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Comdr. E. T. Burton is placed on the retd. list with the rank of Surg. Capt.

ROYAL ARMY MEDICAL CORPS.

Maj.-Gen. T. W. Gibbard, K.H.S., late R.A.M.C., having attained the age for compulsory retirement, is placed on ret. pay.

Col. W. H. S. Nickerson, V.C., M.B., late R.A.M.C., to be Maj.-Gen., vice Maj.-Gen. T. W. Gibbard, K.H.S., to ret. pay.

Lt.-Col. V. J. Crawford, D.S.O., to be Col., vice Col. W. H. S. Nickerson, promoted.

Maj. G. H. J. Brown to be Lt.-Col., vice Lt.-Col. V. J. Crawford, promoted.

Capt. F. K. Escritt is restd. to the estabt. and relinquishes the local rank of Maj.

TERRITORIAL ARMY.

W. H. Gratrix to be Lt.

ROYAL AIR FORCE.

Flight Lt. J. C. Johnson relinquishes his temporary commission on ceasing to be employed.

ROYAL SUSSEX COUNTY HOSPITAL. — At the annual meeting of this large hospital at Brighton it was suggested that difficulties might arise in regard to the increasing number of motor casualty cases. During 1924 the casualties of all descriptions dealt with numbered 4208, as compared with 3832 in the preceding year. In addition, 1327 other cases were seen in the casualty department, an increase of 378, and 16,138 casualty dressings were done in the out-patients' department, an increase of 2203. It was explained that the great majority of the casualties arose from motoring accidents, particularly at week-ends, and with the continued increase of motors on the road the question was one which was causing grave concern to the governors. At the present moment it was believed that a ward for fractures only could be opened. In a fortnight in February this year there was a waiting list of 139, and of the 100 admissions 47 were emergencies and casualties. In-patients during 1924 numbered 3278 against 2588 in 1923, an increase of no fewer than 690. Brigadier-General D'Arcy C. Brownlow declared that the salaries they gave the nurses were inadequate in proportion to the great work they did for the hospitals.

Correspondence.

"Audi alteram partem."

THE BATEMAN FUND.

To the Editor of THE LANCET.

SIR,—The result of the Bateman Appeal is of such importance to the medical profession as a whole that, though I work abroad and am therefore beyond the verdicts of British juries, I send with pleasure a subscription.

As a callow house surgeon 25 years ago I nearly fell a victim to a jury ignorant of technical matters before whom a case had been stated incorrectly by a policeman on oath. I received the censure of the foreman of the jury, both on the conduct of the hospital and my own conduct, a censure which the surgical staff and the house committee of the institution immediately repudiated in the public press. I may add that, as I left the court-house speechless with rage, a man ranged up beside me and said, for my private information, that the foreman of the jury was, as a matter of fact, the person who had supplied the victim in question with the drink from which the fatal accident arose.

I have not forgotten the circumstances and, in enclosing my card, sign myself,

Yours faithfully,

Spain, March 20th, 1925. A VINDICTIVE SCOT.

HEALTH STATISTICS OF THE MERCANTILE MARINE.

To the Editor of THE LANCET.

SIR,—The interesting correspondence that you have recently published with reference to the health of the Mercantile Marine indicates that the progress that has been made both nationally and internationally during the last six years has not been fully appreciated.

Colonel Burke points to the conditions of seamen under the Merchant Shipping Acts in 1916, stating that "he is excluded from the benefit of free treatment." From 1920 until 1923 members of the Parliamentary Committee of the National Council made three endeavours to secure the passage of an amending Bill. This became the Merchant Shipping Amendment Act in 1923, and brings the treatment of seamen for venereal disease under the same conditions as other ailments. For the future, therefore, drugs will be available on every ship, together with such disinfectants as may be required by those who have exposed themselves to the risk of infection and are unable to visit a clinic before reaching the next port. The owners of the lines plying between the British and Scandinavian ports have for the last three years undertaken to distribute leaflets, giving the times and addresses of the free clinics in the ports at which their ships called.

Since 1918 the Office Internationale d'Hygiène Publique has had under consideration the question of securing continuous treatment for these diseases for seafarers of all nations. In 1920, at the International Labour Conference of the League of Nations at Genoa, the whole problem was discussed at a special meeting of the delegates, convened under the auspices of the National Council for Combating Venereal Diseases. As a result of this meeting, a set of resolutions was drawn up, adopted by the conference, and circulated to all participant Governments. They called for—

1. The provision of adequate facilities for the prevention and treatment of venereal diseases at all the principal ports.
2. The inclusion of venereal diseases among the conditions for which free drugs and treatment are provided for members of the Mercantile Marine.
3. The dissemination of appropriate information on the subject to seafarers, and especially to those at training establishments.
4. The provision of adequate facilities for recreation at all large ports under the administration of a joint organisation representative of owners and seafarers.

They desire, in addition, to call the special attention of the International Labour Organisation to the importance of recommendation No. 4 about facilities for recreation.

These resolutions were also transmitted to the Health Section of the League and stimulated general interest in the whole problem, assisting the Health Section of the League and the Office Internationale to secure support for the completion of the international arrangement relating to facilities to be afforded to merchant seamen for the treatment of venereal diseases.

The following countries have already signified their willingness to sign the agreement: Argentine, Canada,* Cuba, Denmark,* Finland, France,* Great Britain,* Greece, Italy,* Monaco, New Zealand,* Netherlands,* Peru, Roumania, Spain, Sweden,* Tunis, and Uruguay. Those marked with an asterisk have already opened free treatment centres, as has also the Government of Brazil.

With the coöperation of the Shipping Federation and of the Seafarers' Joint Council a special pamphlet entitled the Seafarers' Chart of Healthy Manhood, containing a list of over 200 free treatment centres in the principal ports of the world, which has been published by the National Council with the assistance of the Ministry of Health, is about to be distributed to the whole of the British Mercantile Marine.

The Union Internationale contre le Peril Venerien, established in conjunction with the League of Red Cross Societies, and on which 25 countries are represented, together with the Health and Labour Sections of the League of Nations, made the health of the seafarer one of their first considerations. In 1923 the Council of Direction appointed a Ports Committee, of which the representative of the National Council for Combating Venereal Diseases was appointed chairman. Arrangements are now in train to stimulate the practical application of the agreement by arranging for a small commission of two or three experts representing the Union Internationale to visit the principal trading ports. Shipping and seafaring interests in the different countries are being invited to coöperate with their National Social Hygiene or Anti-Venereal Disease organisation in raising funds to finance the undertaking.

It will be seen from the above that the National Council, in coöperation with the British Shipping Federation and the Seafarers' Joint Council, have kept the interests of the health of the British Mercantile Marine prominently in the foreground.

I am, Sir, yours faithfully,

S. NEVILLE ROLFE,
General Secretary, National Council for Combating Venereal Diseases.

102, Dean-street, London, W., March 30th, 1925.

To the Editor of THE LANCET.

SIR,—The letters of Dr. H. M. Hanschell and of Sir P. J. Michelli in your issue of to-day reinforce admirably, and with most practical illustration, the main plea in my letter of March 21st. In that letter I made no reference to the Port of London. I was taking it for granted that all who were interested in the venereally-diseased sailor were aware of the splendid work which has been, and is being, done by the Seamen's Hospital Society. That work is known and appreciated by all who sail the Seven Seas. What I appeal for might be translated as—"Let us have more work along similar lines at all other ports." Owing to the conformation of the Port of London, it is, as Sir P. Michelli says, practically impossible to have a treatment centre in every dock. Those at the Dreadnought Hospital and at the Albert Dock are handily situated; and I suggest no deficiency as far as the Port of London is concerned. My contention is that any large port which does not possess a treatment centre which is open all day and every day within the area of the docks or immediately

adjacent, is making no attempt at the care of the seafarer who is the victim of V.D. For example, in the case of the Port of Manchester, the fact that in the neighbourhood—but by no means adjacent to the docks—there are at Salford Royal and at St. Luke's Hospitals V.D. treatment centres, is of little or no use to the sailor. These places are neither open all day nor every day. Most other ports are similarly situated—the sailor is not catered for.

When I referred to my ideal treatment centre being "exclusively for the use of sailors" I was thinking of it being actually within the dock boundaries. It would have expressed my idea better to have used the term "especially" rather than "exclusively," as I wished to indicate that the centre would not be for the use of the general population but for those whose work involved their presence inside the docks or who lived in the immediate vicinity.

Preventive treatment—in every sense of the term—is, I consider, essential in dealing with venereal diseases. The whole question is a public health one, and must be tackled along public health lines. I am aware of all that has been urged against this view, but that controversial aspect need not be discussed here. One would only point out to Dr. Hanschell that at the present time—as for centuries past—men are signed on who have risked infection, they are neither "cleansed nor injected," they proceed to sea, and a high proportion of them develop V.D. Owners, masters, crews, passengers, medical officers, all know it, and that the chance of such men developing disease is a very high one. Whether or not preventive treatment would increase the number of exposures is beside the point; it would assuredly reduce the number of infections. The fact that a man "agrees or confesses to a chance of developing V.D."—i.e., admits exposure to infection *and is treated on that*—practically ensures that chance vanishing. Preventive treatment efficiently applied and within the correct time does prevent the development of syphilis and gonorrhœa.

The certificate of prophylaxis which I mentioned in my last letter need not, of course, be attached to the man's papers. He might retain it himself. The former method was suggested to lessen the chances of the certificate getting lost, and the man suffering any unjust penalty on the grounds that he had neglected to avail himself of preventive treatment. Again one would express the hope that port authorities who have neglected to do so, will, in the immediate future, make arrangements for the prevention and treatment of V.D. in the areas administered by them.

I am, Sir, yours faithfully,

Manchester, March 28th, 1925. E. T. BURKE.

MALARIAL TREATMENT OF GENERAL PARALYSIS OF THE INSANE.

ICE METHOD OF INOCULATION.

To the Editor of THE LANCET.

SIR,—The ideal and most practicable method of infecting general paralytics with tertian malaria fever consists in the subcutaneous injection of 1½ to 3 c.cm. of malaria-infested blood withdrawn from the vein of a patient suffering from the disease. The procedure is likely to be attended with success where the inoculation is carried out immediately and when the donor and recipient can be brought together.

The impracticability of employing infected mosquitoes owing to relapses in conveying infection to cases of G.P.I. and the difficulties encountered in the cultivation of *Plasmodium vivax* outside the body beyond a definite length of time, have prevented many hospitals distant from a malaria-donor from adopting this method of treatment, and it is my purpose in this note to acquaint your readers of a method that has been devised and tried which will enable a patient residing in any part of the British Isles to acquire the disease irrespective of the distance between donor and recipient.

The technique of the method is easily carried out and was first described by Pötzl of Prague. Ten to 15 c.cm. of venous blood are withdrawn from a patient suffering from malaria fever and allowed to run into a sterile glass flask of 30 c.cm. capacity, containing 10 to 15 small glass sterile beads. The flask is closed with a sterile cork and the whole gently shaken for ten minutes, at the end of which time the blood becomes defibrinated and partially hæmolysed. The serum is then gently poured into a sterile test-tube, corked, and placed either in an ice-chest or a thermos flask containing ice at 0°C. The latter apparatus is convenient where it is required to send a sample of blood by train to some distant town or hospital. Blood has been sent in this way to London, Liverpool, Birmingham, and Cheadle (Cheshire).

My experience of this method of inoculation dates from Nov. 1st, 1924, since when a series of 12 cases have been treated. The amount of blood injected varied from 2 to 6 c.cm. and was given to the patient by the subcutaneous or intramuscular route. Up to the time of writing I have been able faithfully to reproduce the fever in ten cases with specimens of blood kept at 0° C. outside the body for a period up to 66 hours. Again, I have been able to stain tertian parasites in iced defibrinated blood aged 7 days.—I am, Sir, yours faithfully,

J. D. SILVERSTON, M.B., B.S. Durh.,
Senior Assistant M.O., County Mental Hospital,
March 28th, 1925. Whittingham, Preston.

THE TREATMENT OF PULPLESS TEETH.

To the Editor of THE LANCET.

SIR,—This letter is occasioned by the leading article in THE LANCET of Feb. 7th on this subject.

There are two minor points to which I take partial exception. These relate to (1) the interpretation of the results of the bacteriological examination, and (2) the economic feasibility of such an examination. In the first place, you write: "The ideal treatment should logically include cultures from the root canal to ascertain when they were free from infection . . ." This statement implies that it is possible to ascertain when root canal (periapical) infection has been eliminated. On the contrary, infection may be present in spite of a negative culture, which consequently does not *ipso facto* give the dentist warrant to proceed to the definitive occlusion of the canals. A positive culture, however, means emphatically that the canals are not yet ready for filling. In this lies the chief usefulness of bacteriological examinations in root canal work.

Further on the economic aspect of these examinations is brought up. "As a practical addition to private practice it is scarcely feasible, for it would add so much to the cost and length of treatment as to make it prohibitive except to a favoured few." This I do not believe is necessarily true, as will appear in what follows. For a number of years bacteriological, as well as roentgenographic, control of root canal technique has been routinely pursued in the clinics of the Dental School of the University of Pennsylvania. Our practice is first to have a smear made on a glass slide from a dressing which has been sealed in the tooth. This is not done until the clinical experience of the operator indicates that the root canals are ready for filling. This smear is stained and examined with an oil-immersion lens. If bacteria or extremely large numbers of polymorphonuclears are found the conclusion is drawn that infection persists. Treatment may be continued or recourse may be had to apical curettage, root amputation, or extraction. If bacteria are not found and if polymorphonuclears are few or absent, then a culture is taken. If this be negative 48 hours later, and if no clinical contra-indications appear in the meantime, the canals are definitively filled.

When I last went over the records 937 cultures had been made. Before each there had been a direct

microscopic examination of a smear made from the canal dressing, which microscopic examination had failed to reveal bacteria. This negative result was confirmed by 467 of the cultures, and contradicted by 470 of the cultures. In other words, of two negative microscopic examinations, one will be confirmed and the other contradicted culturally.

These results also emphasise another point which is in consonance with the spirit of your article. Over one-half of the root canals, clinically deemed ready for filling, showed persistence of infection. This result by stressing the unreliability of clinical criteria alone stresses the value of bacteriological checks. Assuming for the sake of argument that a cultural examination is not generally feasible on economic considerations, this objection cannot hold for the direct microscopic examination of a stained smear. The time required for this is at a maximum five minutes. It is done while the patient is in the chair, and in case of a positive result one can at once return to the treatment. Not only is the time, but what is at least quite as important, the *continuity* of the treatment is saved.

Wherever cultural examination is for any reason not made, this direct microscopic examination alone may be used, and it has proved to be an appreciable improvement over current visual and olfactory tests. Many times a dressing, which grossly appears inoffensive, will show microscopically the incontestable presence of bacteria. This direct microscopic control in root canal work reaches its maximum of usefulness when dichloramin-T or some other lymphogogue is used in the treatment.

I am, Sir, yours faithfully,

JOSEPH L. T. APPLETON, Jun.

The Thomas W. Evans Museum and Dental Institute, School of Dentistry, University of Pennsylvania, March 14th, 1925.

THE HOSPITAL POLICY OF THE BRITISH MEDICAL ASSOCIATION.

To the Editor of THE LANCET.

SIR,—A meeting of the consultant physicians and surgeons attending the voluntary hospitals of Birmingham was held on March 20th. The meeting was called for the purpose of nominating members for the Local Hospital Committee of the British Medical Association, and for the purpose of discussing the hospital policy of the B.M.A. At this meeting the following resolution was carried unanimously:—

That, taking into consideration the importance of medical education and the fact that the large teaching hospitals are specially organised and staffed for such work, this meeting is of the opinion that in the scheme of hospital policy of the British Medical Association these hospitals should be put in a class by themselves.

I am, Sir, yours faithfully,

Birmingham, March 26th, 1925. JAS. M. SMELLIE.

THE USE OF RADIUM EMANATION.

To the Editor of THE LANCET.

SIR,—It has recently been prominently stated in the lay press that the capture and clinical use of radon (radium emanation) by the Middlesex Hospital is a "new discovery." In justice to the Radium Institute, will you allow me to say that the technique of treatment by radon tubes has been practised here since 1912, and that the method adopted was published in the annual report of this Institute for that year. Since that date radon tubes have been supplied in steadily increasing number to medical practitioners and hospitals throughout the country, and in the year ending Dec. 31st, 1924, 1067 such tubes were distributed.

I am, Sir, yours faithfully,

A. E. HAYWARD PINCH, F.R.C.S.,
Medical Superintendent, The Radium Institute.

16, Riding House-street, Portland-place, London, W., March 30th, 1925.

Obituary.

JOSEPH McGREGOR ROBERTSON, M.A., M.B., C.M. GLASG., F.R.F.P.S. GLASG.

THE medical profession of Glasgow mourns the loss of one of its ablest members through the death of Dr. McGregor Robertson, of 26, Buckingham-terrace, which occurred suddenly on March 17th, after he had addressed a meeting. He had been suffering recently from severe recurrent attacks of influenza, which had weakened his physique, but he refused to take the much-needed rest and carried on his work without pause until the end.

Dr. McGregor Robertson was born in 1858 and educated at Glasgow University, where he graduated M.A. in 1876, and M.B., C.M., with honours, in 1880. He was admitted to the Fellowship of the Royal Faculty of Physicians and Surgeons, Glasgow, in 1892. After graduating, he studied physiology under Du Bois Reymond, Kronecker, and Christiani in Berlin. As a student he was one of the most distinguished men of his year, and was admittedly the best speaker in debate. Then, as always, his clearly defined ideas were emphasised with point and vigour. The well-known professors in Germany with whom he was associated thought him both an able and original investigator, and united in paying tribute to his capabilities and unceasing industry. On his return to Glasgow he was appointed Muirhead Demonstrator of Physiology in the University and, as was customary in those days, he entered private practice as a physician. A distinguished academic life seemed assured, but his success as a physician was so rapid that the claims of his private practice prevented him from following the career for which by temperament, talents, and training he was so pre-eminently fitted. He was specially interested in eye diseases and became one of the surgeons at the Ophthalmic Institute. Recognising the value of radiology, he was amongst the first to instal an X ray apparatus in his private laboratory, and there, despite the increasing calls on his scanty leisure, he pursued throughout his life extensive research work. As an acute clinical observer, and as an accurate diagnostician, he could command the confidence of his patients. Though in chronic ill-health, he pursued ideals of medical practice which will remain an inspiration to all who had the privilege of knowing his work. During the war he was appointed hon. consulting physician of the Royal Naval Hospital, Bute, and to the Princess Louise Scottish Hospital, and latterly accepted a position as physician in the Stobhill Hospital. In 1921 the Royal Faculty of Physicians and Surgeons of Glasgow selected him to represent them on the board of managers of the Western Infirmary.

Dr. McGregor Robertson was an able lecturer with literary gifts which were well shown by his numerous contributions to medical literature. He published in 1884 a treatise on "Physiological Physics," and in 1887 an "Elementary Text-book of Human Physiology," and various papers dealing with such subjects as the Clinical Examination of the Blood, the Employment of Bad Nauheim Waters in Disease, Congenital Pyloric Stenosis and the Quality of Freshness in Food and amount of Light, as related to health and growth. His interests, apart from medical practice, were wide and varied, and he took a leading part in Glasgow in all questions of medical politics and public health.

He is survived by his wife, four daughters, and one son, to whom sympathy will be widely extended.

LABORATORY FOR CHILD STUDY.—The McGill University, Toronto, has given £10,000 from the Laura Spellman Rockefeller Memorial Fund to provide a child study laboratory in connexion with the Faculty of Medicine.

ENDOCRINE THERAPY.

A MEETING of the Royal Society of Medicine was held on March 31st, Sir William Hale-White being in the chair, when Dr. W. Langdon Brown opened a special discussion on Endocrine Therapy.

The Clinician's Point of View.

He said that there were five methods of administration of endocrine substances. The oral method was very uncertain except in a few cases of pituitary administration, in which it was difficult to exclude the element of suggestion. The nasal method was originally investigated as a result of the suggestion that this might be a more advantageous route for pituitary preparations since the pituitary itself was an outgrowth of the nasal mucosa. A fair degree of success had been obtained in the treatment of diabetes insipidus in this way, and there was a possibility that adrenalin also might be absorbed by this route. Rectal injection had had a measure of success in selected instances, but subcutaneous injection remained the most effective method of introducing all the substances concerned. Grafting and transplantation were still on trial; the ingrafted material was treated as a foreign body and absorbed so that the action could be but temporary. The results seemed to be better if the graft were placed in some homologous tissue, as, for instance, the insertion of adrenal grafts into the testis, which method had been known to produce a continued life in the graft for over two years. It would be of great advantage if some biochemical tests could be devised to form a standard for investigation of the action of these substances; at present there was only the basal metabolic rate and the blood-sugar. These were probably of wider application than was as yet realised, as were also the more limited tests of the tolerance to quinine hydrobromide and the calcium content of the blood. The difference of opinion between the clinician and the laboratory worker was partly due to the credulity and over-readiness of the former to acclaim untried therapeutic agents, and partly to the fact that the laboratory worker was able to reduce his problem to the simplest possible terms, so that he was liable to forget the much more complicated and delicate adjustments with which the clinician had to deal. Scepticism had even gone so far as to deny the interactions between the endocrine and autonomic nervous systems, but there seemed little doubt that the coöperation between the adrenal, thyroid, and pituitary glands on the one hand and the pancreas and parathyroid on the other, and their mutual antagonism, was supported by a considerable body of experimental evidence. It must be admitted, however, that if polyglandular therapy had a rational basis it was often very irrationally applied. It was scientific nihilism to doubt that the pharmacological reaction to adrenalin and pituitary extract were not due to the glands from which the secretions were extracted. It was easier to believe that there was some coöperation between the adrenal medulla, derived from sympathetic ganglion cells, and the sympathetic nervous system than to refuse to believe that the adrenal medulla played any part in the syndrome resulting from the administration of adrenalin or the stimulation of the post-ganglionic fibres. The thyroid was the gland most widely and most easily administered; the original doses were now known to be too large; never more than 6 gr. per diem of fresh gland extract should be given and the best commencing dose was half a grain three times a day. It was of value for children who showed a failure of growth, nocturnal enuresis, night terrors, ligamentous relaxation, &c. Parathyroid had a great function as a katabolic agent; if its normal secretion were diminished there was an accumulation of waste tissue in the body. It could be absorbed when given therapeutically, producing a great rise in the calcium content of the blood. Adrenal substance seemed to be of little use in substitution therapy; its value lay in its pharmacological action as a local anæsthetic and hæmostatic, in the reduction of spasm and in asthma. It seemed that pituitary might be absorbed by the stomach, but its value as a substitute was doubtful; it might relieve the symptoms of Fröhlich's syndrome and of adiposity, and it was valuable in diabetic conditions and as a stimulant to plain muscle and heart muscle. The use of insulin in diabetes was proved, and the impression that its administration must be for life should be strongly contradicted; many patients were able to return to normal life without the continuance of the drug. Ovarian extract had also proved its value, but the present preparations were not wholly satisfactory. It must be free from corpus luteum and might be of value in thymic asthma and transient glycosuria. Orchitic substance was more doubtful; it was as yet too soon to judge of the value of the grafting methods recently introduced.

The Physiological Aspect.

Prof. Swale Vincent said that there was a great deal to be said on the side of sanity; the present vogue of endocrine therapy was only to be compared with the indiscriminate sale of patent medicines. There should be no essential difference between the laboratory worker and the clinician. If the latter were faced with a more complicated problem to solve, that was all the more reason why he should summon all his scientific accuracy to his aid. It would be hard to find any laboratory worker who would do such bad experiments or be so shameless in publishing them as some of the endocrinologists. Every possible tissue had been hailed as a therapeutic agent and every possible mixture put on the market. In none of them, with one exception, was there more than a little, if any, evidence of any effect whatever being produced when they were taken by the mouth, unless given in sufficient quantity to serve as foods. It was justifiable to regard with great suspicion the report that any pharmacologically inactive substance was of clinical value. Thyroid extract was a very valuable drug leading to prompt and well-recognised effects when given to animals. Thyroxin was less powerful than the extract. Its value in cases of thyroid deficiency was well known and a drug which stimulated the activity of the whole body must be of value in many other conditions. It was by no means clear that any form of tetany was connected with the parathyroids except that variety which followed operations on the thyroid. The parathyroid preparations on the market were pharmacologically inactive, and it was doubtful whether they produced any effect at all when given by the mouth. In animals the tetany due to parathyroid deficiency often disappeared without any substitution therapy; it was probably due to many factors and curable by many forms of treatment. The actions ascribed to the pituitary were very likely due to the hypothalamus. The uses of pituitary extract were not those of substitution therapy. It would be rash to say that the action of adrenalin bore any relation to the adrenal body. There was no effect when given by the mouth with the possible exception of a local action on the lining membrane of the stomach. Ovarian and testicular extracts had no noticeable effects in health or disease beyond a slight irritation. The pancreas was undoubtedly responsible for an internal secretion, the failure of which led to diabetes in animals and probably in man also. Insulin might be obtained from many organs and tissues, though it seemed to originate chiefly in the islets of Langerhans. It ranked with thyroid extract as a very valuable substitution agent, best administered subcutaneously. There was yet much to be investigated; insulin had been obtained from the bodies of animals which had been de-pancreatised some weeks before and from a patient dying of diabetic coma.

Veterinary Endocrinology.

Mr. Leslie Pugh said that the use of endocrine substances in veterinary work did not differ materially from that in medical work. Pituitary was used in obstetrics and thyroid in a variety of conditions. It was found that the amount of milk produced was

not altered by the administration of pituitary, but the udder was emptied more quickly, and this action was very useful in cases of cows which would yield milk to a calf but refused to do so for the milker. Milking demanded some degree of coöperation on the part of the cow, and where this was lacking, owing, presumably, to a psychic factor, a dose of pituitrin shortly before milking cured the condition. Corpus luteum extract had been used for sterility in cattle. In cases of slight puerperal infection it often happened that the animal apparently recovered, but the normal ovarian cycle was not resumed. This was found to be due to an unruptured Graafian follicle. If this was removed by rectal manipulation the œstral cycle recommenced within a few days. If it was left the chronic cystic condition combined with the suppression of the normal cycle led to an endocrine disturbance which ended in nymphomania. The combination of thyroid extract with the local manipulation had been found beneficial, especially in curing the ligamentous relaxation which accompanied the puerperal condition. In cases of mummified fœtus pituitary extract was given to expel the fœtus, but was of no use until the corpus luteum of pregnancy had been dislodged. In these cases the corpus luteum did not undergo the changes seen in the later half of a normal pregnancy; it appeared to go on functioning indefinitely, suggesting that some secretion from the fœtus or placenta might be the cause of its involution. Insulin had been used for the hyperglycæmia and ketosis of cattle.

Cases of Obesity and Defective Growth.

Dr. H. Gardiner-Hill referred to work carried out at St. Thomas's Hospital on some 150 cases of obesity and defective growth. A number of lantern-slides were shown illustrating the changes produced in the body-weight, rate of growth, and carbohydrate metabolism as a result of the administration of thyroid and pituitary extracts together, by the mouth. The whole-gland pituitary preparations alone did not reduce the weight, but seemed to increase the tolerance to thyroid. In both adolescent and adult cases the improvement had been marked and there seemed no doubt that the cases were benefited by the treatment. Posterior pituitary alone had no effect on growth.

Testicular Grafting.

Mr. Kenneth Walker confined his remarks to the effects of testicular extract and grafts. It might be said quite definitely that the oral administration of testicular extract was absolutely useless; all experiments had been negative. Experiments with grafting were rendered difficult by the scarcity of material and the necessity for careful technique to ensure vascularisation. Voronoff claimed valuable results from his work on the testes of apes, but it seemed that the improvement was rather in the nature of an increase of muscular and mental vigour and general well-being and growth of hair than any specific action on neurasthenia or sexual disabilities. Mr. Walker himself had performed transplantations with human material, using much the same technique as Voronoff and implanting the graft in a serous cavity where it was nourished by the rich exudate until vascularisation could take place. In his experience the grafts survived for two or three months, but there was degeneration of the tubules into cords and the cells regressed to an embryonic condition. Death of the graft did not necessarily mean loss of all the benefit. It might be that the secretion supplied by it tided the patient over a critical period while the compensatory function of other glands was being established. It must not be forgotten that the testis was seldom the whole seat of the trouble; there was a reciprocal involvement of other glands and structures which could not be affected by a graft. The operation of ligature of the vas deferens led to marked sexual excitement and increase in the interstitial cells of the testis. Steinach's results were impressive, as the life-period was undoubtedly increased in rats, although relapse inevitably occurred sooner or later. In man the results were much less certain; in some cases there seemed to be no benefit, in others an improvement in the general health. It was by no means certain that the internal secretion of the testis came from the interstitial cells, but this did not nullify the experiment. Mr. Walker had himself done 15 such operations, and although it was difficult to eliminate the element of suggestion it seemed that there had been improvement in 30–40 per cent. He advised the operation in paralysis agitans, as two out of five cases he had done showed marked benefit therefrom.

The debate was adjourned.

Medical News.

UNIVERSITY OF OXFORD: *Radcliffe Prize.*—On the Report of the Examiners the Radcliffe Prize has been awarded by the Master and Fellows of University College to Dr. John M. H. Campbell (Magdalen and New College). The work of Dr. Kenneth J. Franklin, Fellow of Oriel College, was highly commended. The prize is of the value of £50, and is awarded every two years for research work in medicine carried out by a medical graduate of the University.

Radcliffe Travelling Fellowship.—The Master and Fellows of University College announce that, on the Report of the Examiners, the Electors have awarded the Radcliffe Travelling Fellowship, 1925, to Dr. Kenneth J. Franklin, Fellow of Oriel College. The Fellowship is of the annual value of £300, and is tenable for two years, subject to certain conditions of travel and study abroad.

UNIVERSITY OF LIVERPOOL.—At examinations held recently the following candidates were successful:—

FINAL EXAMINATION FOR DEGREES OF M.B. AND CH.B.

Part I.—H. W. Altschul, G. S. Clouston, R. F. Corlett, D. E. Davies, R. W. Eldridge, J. H. Gilchrist, J. Halton, E. Hulme, T. A. Jermy, C. Kaufman, J. C. McFarland, E. P. Moloney, J. Morgan, H. E. Pearson, D. E. Pritchard, Thirza Redman, Mary H. Simpson, and A. K. Wilson.

Part II.—M. A. E. Azzam, H. E. Barrow, W. Howard, J. Katz, G. W. Molyneux, Mary A. Silcock, J. Tarshish, and W. L. Webb.

DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY.

I. Davies, A. Gillies, A. J. Murray, and J. R. Parry.

UNIVERSITY OF DURHAM: FACULTY OF MEDICINE.—At the Convocation held on March 28th the following degrees and licences were conferred:—

BACHELOR OF MEDICINE AND BACHELOR OF SURGERY.

Joseph F. Hedley, Gwendolen Jones, Maurice H. Jones, William F. Lascelles, Harold Levy, Fenwick Lishman, Charlotte B. Schofield, and Alfred B. W. Smart.

LICENCE IN DENTAL SURGERY.

William J. Collins, John E. Daniels, Robert Moody, Hylton Park, and Ethel Robinson.

At examinations held recently the following candidates were successful:—

THIRD EXAMINATION FOR DEGREES OF BACHELOR OF MEDICINE AND BACHELOR OF SURGERY.

Materia Medica, Pharmacology and Pharmacy; Public Health; Medical Jurisprudence; Pathology and Elementary Bacteriology.—Reuben Abrahams, Harry Birk, Evelyn H. Bolt, Ethel Browell, Basil A. Dormer, and Melville M. Macintyre.

SECOND EXAMINATION FOR DEGREES OF BACHELOR OF MEDICINE AND BACHELOR OF SURGERY.

Anatomy and Physiology.—Second-class Honours: Alfred R. D. Pattison, Coley Goldstein, and James M. Tait. Pass: Hugh M. Brown, David S. Buchanan, William F. Cross, William C. E. Diamond, Ernest A. H. Hindhaugh, James C. V. Hindhaugh, James H. Hudson, Thomas L. Kelly, Harold G. Ungley, and Nora Walkinshaw.

EXAMINATIONS FOR THE LICENCE IN DENTAL SURGERY.

First Examination (New Regulations).—*Organic Chemistry; Biology; Dental Mechanics (Theoretical), and Dental Metallurgy (Theoretical and Practical).*—Thomas H. Brown.

Second Examination (Old Regulations).—*Dental Mechanics; Dental Metallurgy.*—Jack Abrahams, John Auton, Reginald H. Chapman, and Arthur J. Jackson.

Third Examination (Old Regulations).—*Anatomy, Physiology, and Histology; Dental Anatomy, Dental Histology, and Dental Materia Medica.*—Philip W. Eddy.

UNIVERSITY OF DUBLIN, SCHOOL OF PHYSIC, TRINITY COLLEGE.—At examinations held recently the following candidates were successful:—

FINAL MEDICAL EXAMINATION.

Part I., Materia Medica and Therapeutics; Medical Jurisprudence and Hygiene; Pathology and Bacteriology.—*Robert A. Q. O'Meara, *James W. Bowden, *Jack M. Selkon, *Robert E. Hadden, *Thomas J. W. Keown, *John H. M'Lean, John J. O'Dwyer, George W. H. Townsend, Arthur B. Brooks, Johan N. S. Gouws, Myer Hoffman, Cicero G. Nel, Kathleen I. Purdy, Derek St. C. Mackenzie, Gerald O. Taylor, Edward A. Ellis, Gladys L. Craig, Daniel J. Roux, John Johnston, Christina M'Donald, Rachel E. Porter, and John Quigley.

Part II., Medicine.—*Thomas W. MacDowell, Charles F. D. M'Caldin, William C. Somerville-Large, Kathleen D. Murison, George F. Gillespie, Edward M'Alpine, Wilfred H. Anderson, O'Donel T. D. Browne, Joseph R. Gregory, Richard T. Cronin, James Dick, Thomas C. Foster, Paul N. H. Labuschagne, William B. Roantree, Frederick M. Purcell, Norman M. Greeves, François J. Marais, Annie T. Deane, Francis H. M'Kenna, John V. Morris, Robert W. Harte, John Cussen, Gordon P. Bamford, Oliver Chance, William P. E. M'Intyre, Augusta M. Young, William Gallaugher, John L. Levingston, James L. Marshall, Mary Galvin, Francis V. Duke, Christopher Lord-Flood, John A. MacDonnell, Robert A. Heatley, Jerreth Horwich, Harry Nelson, and Ahmed A. Shafik.

Surgery.—*Edward M'Alpine, Roy K. Carson, William A. Redmond, Richard T. Cronin, John A. MacDonnell, Lewis C. Brough, Eric T. S. Rudd, Edward S. A. Crawford, Thomas G. B. Crawford, Frederick M. Purcell, Herbert W. Strong, John M. Johnston, Charles J. du Plessis, Edmund J. Walsh, John E. Beatty, John Crawford, François J. Marais, Leslie M. Whitsitt, Edward A. Bennet, Raymond J. G. Hyde, John G. Maguire, Godfrey W. Garde, William C. G. Potts, Cecil R. Moore, Herbert Birney, Robert V. Franklin, Robert A. Heatley, and Israel Strasburg.

Midwifery.—*Charles R. Bowland, *John F. Wilde, *Robert L. Forsyth, *Elias Rakoff, Elspeth V. D. Hewat, Francis H. M'Kenna, John E. Stokes, Geoffrey D. Edwards, Ahmed A. Shafik, Maurice Sherowitz, Philip B. Robinson, Barend P. Pienaar, Margaret W. Pike, Launcelot W. R. Haskins, Charles E. M'Causland, Wilfred Sinclair, Mary Galvin, Henrietta Armstrong, John E. Beatty, and Wolsey C. Sloan.

Master in Surgery.—Daniel de Bruijn.

Master in Obstetric Science.—David J. Malan.

* Passed on high marks.

INTERMEDIATE DENTAL EXAMINATION.

Anatomy and Physiology.—Andrew A. Gardner, Robert W. Mather, John H. O'Hare, and George M. Titterington.

DIPLOMA IN GYNÆCOLOGY AND OBSTETRICS.

Elizabeth N. Thompson.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—Sir Arbuthnot Lane, the President of the Fellowship of Medicine, will preside at the continued discussion on Post-Graduate Study in London, to be held at the house of the Royal Society of Medicine, 1, Wimpole-street, London, W., on Wednesday, April 8th, at 6 P.M. It is hoped that members of the medical profession who are able to attend will do so and will voice their views for the improvement and extension of post-graduate work.

ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE.—The twenty-third meeting of this Commission was held at the Home Office, Whitehall, on March 26th, Sir Andrew Duncan in the chair. Evidence was given on behalf of the Federation Committee of English, Scottish, and Welsh Insurance Committees by the Rev. W. D. Yoward, vice-chairman, Mr. Edwin Potts, hon. secretary, Mr. W. M. Marshall, ex-chairman, and Mr. F. Llewellyn Jones, chairman of the Federation, the administrative work of the Insurance Committees and questions of the extension and improvement of medical and treatment benefits being fully dealt with. Thereafter Mr. Marshall gave evidence on the features peculiar to Scotland and Mr. Llewellyn Jones on the Welsh position. Mr. Eynon Lewis then gave evidence on behalf of the Glamorgan County Insurance Committee with special reference to the South Wales Medical Institutes. The Commission announce that proof copies of the oral evidence and the relative statements submitted at the meeting of March 12th are now on sale at H.M. Stationery Office (3s.).

NATIONAL ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS.—The Eleventh Annual Conference of the Association will be held in London on Monday and Tuesday, July 6th and 7th. The main object under consideration will be Tuberculosis in Childhood, and the address introductory to the discussion will be given by Prof. Pirquet, of the University of Vienna. The afternoon of the second day (July 7th) will be devoted to addresses on the Treatment of Tuberculosis by Sanocrysin, by Prof. Holger Möllgaard, Professor of Physiology, Royal Veterinary and Agricultural College, Copenhagen, and Prof. Knud Faber, of the University of Copenhagen. The meetings will be held at the Robert Barnes Hall (Royal Society of Medicine), 1, Wimpole-street, W. 1. The conference is open to all persons interested in tuberculosis on payment of a fee of one guinea, which includes a copy of the report of the proceedings. The Council of the Association announces that the Minister of Health will be prepared to sanction under the Local Authorities (Expenses) Act the payment of the reasonable expenses of not more than three delegates, among whom should be included the medical officer of health or chief clinical tuberculosis officer, or both, from county councils, county borough councils, joint tuberculosis committees, and metropolitan borough councils. Further particulars may be obtained from the Secretary at 20, Hanover-square, London, W. 1.

THE LATE MR. JAMES TAYLOR.—The death occurred at his residence in Clifton, Bristol, on March 22nd, of Mr. James Taylor, M.R.C.S., L.S.A., who was the son of a well-known Bristol surgeon. Mr. Taylor qualified some 50 years ago and was one of the first medical men in Bristol to become interested in Rontgen rays. During the war he was a captain in the R.A.M.C. (Territorials), and was radiologist to the Bristol Royal Infirmary, where at the time of his death he was consulting radiologist. Mr. Taylor made many friends and was beloved by all his patients, though ill-health of recent years prevented his attendance on any but those whom he had known for many years. Keenly interested in everything that concerned Bristol, he took a prominent part in many local movements; he was a good sportsman and an enthusiastic Freemason.

LISTERIAN SOCIETY.—The Listerian Society of King's College Hospital met under the presidency of Mr. C. P. G. Wakeley on March 24th, for the purpose of conducting a trial in accordance with the rules of legal procedure. The charge was one of manslaughter, and the counsel for the defence was Mr. J. Forster, of the Inner Temple, and the prosecution was conducted by Miss Llewelyn Davies, of the Inner Temple. The conduct of the medical aspects of the charge was under the direction of the Sambrooke Registrars, Dr. Livingston and Mr. A. C. Edwards. Mr. Justice McCardie was the judge, and greatly contributed to the proceedings by a learned summing-up dealing with the law on the subject. As a means of learning court procedure and securing confidence in giving evidence the proceedings of the evening were admirably adapted to be useful and instructive to the students, who warmly expressed their appreciation of the presence of the judge after an exacting day in the Royal Courts of Justice.

THE LATE DR. A. W. BEAUMONT.—Albert William Beaumont, who died on March 26th in his seventy-first year, was a well-known practitioner in East Ham. He graduated in Arts at the University of Cambridge in 1877, and then turned to the study of medicine at St. Mary's Hospital Medical School, and later in Dublin. He qualified L.S.A. in 1882, L.R.C.S. & L.M. Edin. in 1885, and M.D. Dub. in 1898. He practised for a time in Cambridge, in 1886 moved to Beckton, and later to East Ham, where for 22 years he was medical officer of health, and for nearly 30 years surgeon to the West Ham Guardians. He was also consulting surgeon to the East Ham Cottage Hospital. He was surgeon to the Gas Light and Coke Company for 39 years. Dr. Beaumont leaves a widow and two sons, both of whom follow their father's profession, and two daughters.

CONGRESS OF OBSTETRICS AND GYNÆCOLOGY.—The fifth British Congress of Obstetrics and Gynæcology will be held in London at the rooms of the Royal Society of Medicine, from April 22nd to 24th inclusive, under the presidency of Dr. Russell Andrews. The constituent societies of the congress are the Section of Obstetrics and Gynæcology of the Royal Society of Medicine, the Edinburgh Obstetrical Society, the North of England Obstetrical and Gynæcological Society, the Midland Obstetrical and Gynæcological Society, the Section of Obstetrics and Gynæcology of the Royal Academy of Medicine, Dublin, and the Ulster Medical Society. Prof. W. Blair Bell, Dr. R. W. Johnstone, Sir Ewen J. Maclean, Dr. T. W. Eden, and Mr. T. G. Stevens form the Executive Committee, the last two being respectively the chairman and treasurer. Prof. J. Whitridge Williams, of Baltimore, and Prof. W. W. Chipman, of Montreal, will be the official guests. In addition to the president, the chairmen of the various sessions will be Dr. J. E. Gemmell, Prof. B. P. Watson, Prof. T. Wilson, and Dr. L. L. Cassidy, and communications will be made by Dr. Gibbon FitzGibbon, Prof. J. Munro Kerr, Dr. J. W. Bigger, Dr. L. P. Lockhart, Prof. J. H. Teacher, Dr. Bethel Solomons, Prof. A. Donald with Dr. K. V. Bailey, Dr. Wilfred Shaw, Dr. G. I. Strachan, Dr. Malcolm Donaldson, Dr. Agnes Bennett, Prof. Louise McIlroy, and Dr. E. P. Williams. On Wednesday, April 22nd, there will be a luncheon at Pagani's Restaurant given by the Section of Obstetrics and Gynæcology of the Royal Society of Medicine, and on the same evening at 9 o'clock the President and Mrs. Russell Andrews will entertain members of the congress and their friends in the rooms of the Royal Society of Medicine. The congress dinner will be held at the Criterion Restaurant on the evening of Thursday, April 23rd. Arrangements have been made with the principal hospitals for members of the congress to be present at operations, and a pathological exhibition will be held. The hon. secretaries are Mr. Clifford White, 62, Harley-street, W. 1, and Mr. J. Barris, 50, Welbeck-street, W. 1, and advance copies of the reports from the various bodies on the Prognosis and Treatment of Puerperal Sepsis can be obtained from Mr. Clifford White if application is made before April 10th.

REBUILDING OF MIDDLESEX HOSPITAL.—The rebuilding of this great hospital on its present site will cost about half a million, and it is intended next month to launch "the largest appeal ever made in this country for any single hospital." The new building will include a paying patients' wing and greatly enlarged and improved accommodation for the nursing staff, which numbers nearly 200.

ROENTGEN SOCIETY.—A general meeting of this society will be held on Tuesday, April 7th, at 8.15 P.M., in the British Institute of Radiology, 32, Welbeck-street, London, W. Mr. R. Craig Rodgers will read a paper on the Organisation and Equipment of X Ray Rooms arranged for Private Radiologists, and Mr. G. T. Loughborough will read a paper on Acute X Ray Burns The eighth Silvanus Thompson Memorial Lecture will be delivered by M. Le Duc de Broglie, Paris, during the International Congress of Radiology, to be held next July, and the Mackenzie Davidson Memorial Lecture will be delivered by Sir Berkeley Moynihan, also at a meeting to be held during the International Congress.

THE LOCAL GOVERNMENT ACT, IRELAND.—The Local Government Act became law last week, having been under discussion in the Oireachthas for nearly a year. It makes notable changes in the machinery of local government in the Free State. The county is now to be the only unit for administration and sanitary purposes. The rural district councils are abolished. From the medical point of view the most important provision of the Act is that for the appointment of a medical officer of health for each county area. Certain changes are also made in the laws regarding pensions of officers of local authorities, but medical officers are not injuriously affected. Among the statutes repealed by the present Act is the Ministry of Health Act (Ireland), 1919, and with it goes the Irish Public Health Council.

DONATIONS AND BEQUESTS.—Mrs. Elizabeth Shaw, of Kensington, W., and Newbury, Hants, left by will £1000 to St. Bartholomew's Hospital and £1000 to the Hospital for Incurables, Putney.—Mr. Robert Meggitt, Uplands, Richmond, Surrey, bequeathed £5000 to Richmond Royal Hospital. The testator also directed that £15,000 be divided among the Royal Hospital for Incurables, Putney Heath, King Edward's Hospital Fund, London, the London Hospital, London Orphan School, Watford, and Dr. Barnardo's Homes. He also left £500 for distribution among the poor of Richmond.—At the annual meeting of University College, London, it was announced that Mr. Geoffrey Duveen, in addition to his generous gift of £15,000 of last year, had given £50,000 for the construction and equipment of a new Royal Ear Hospital, which will contain 42 beds for in-patients and ample room for the treatment of out-patients, and will embody all the latest improvements in hospital construction and equipment.—Under the will of Mrs. Jane Lewis, of Hackney, in accordance with the views of the testatrix, £22,000 will be devoted to the erection of a new wing to the Royal Victoria Eye and Ear Hospital, Dublin.—The widow of Mr. Tetley, a director of Courtauld's, Ltd., in fulfilment of her husband's desires, is distributing £40,000 amongst the charities in Leigh, Flint, and Coventry, and other places where Courtauld's had works. The treasurer of Leigh Infirmary has received £4000 from the fund for the infirmary, and £1000 for Leigh Sick Nursing Association.—Representatives of the trustees of the Treloar Cripples' Home, Alton, on Feb. 20th received at Portsmouth a cheque for £10,000, being the amount raised in the town for the establishment of a ward for the treatment of Portsmouth's 500 crippled children.—Lord Bledisloe is giving one half of his salary as Parliamentary Secretary to the Ministry of Agriculture to the Lydney and District Cottage Hospital.—Bradford Woolcombers, Ltd., are contributing £13,000 towards the building fund of the contemplated new Bradford Royal Infirmary.—Sir Louis Pearson, who has just retired from the presidency, has promised £5000 towards the extension fund of the Nottingham General Hospital.—Princess Louise has made a donation of £1000 to the Princess Louise Hospital for Children, Kensington.—Lord Leverhulme has sent a donation of £1000 in connexion with the appeal to rebuild the Kensington, Fulham, and Chelsea General Hospital.—Mr. Daniel Henry Shilson, of St. Austell, Cornwall, left, among other bequests, £1000 each to the Royal Cornwall Infirmary and the St. Austell Nursing Association.—The Government of Sierra Leone has sent £500 towards the funds which are being raised for the foundation of the Ross Institute and Hospital for Tropical Diseases.—The Chelsea Hospital for Women has received a donation of £100 from the Westminster Bank, Ltd., acting in the distribution of the charitable bequests of the late Mr. George Macbain.—The Royal Medical Benevolent Fund Guild gratefully acknowledges a donation of £200 from Mr. George Macbain, deceased, per Westminster Bank, Ltd.

THE BATEMAN APPEAL.

As already explained in THE LANCET, it has been felt that material assistance ought to be offered to Dr. Bateman to meet the legal expenses of his recent successful appeal against conviction and to make good the deficiency in his professional income. Accordingly, the Bateman Fund has been opened and lists of contributions have appeared in recent issues. We have received additional contributions as follows:—

	£	s.	d.
Already received and acknowledged ..	401	19	0
Prof. A. L. McIlroy	5	5	0
Prof. W. Blair Bell	3	3	0
Dr. L. Franklin	3	3	0
Anonymous	2	2	0
Dr. F. A. M. Flegg	1	1	0
Dr. F. S. D. Hogg	1	1	0
Dr. G. Hollings	1	1	0
Dr. J. Macdonald	1	1	0
Dr. W. W. Maxwell	1	1	0
Dr. H. P. Miller	1	1	0
Dr. H. T. Nixon	1	1	0
Dr. C. E. Silvester	1	1	0
Dr. J. H. Waddington	1	1	0
Dr. R. S. Corey	0	10	6
A. M. W.	0	10	0
Dr. H. S. Hollis	0	2	6

Remittances should be forwarded to the Manager of THE LANCET, 423, Strand, W.C. 2, and made payable to the "Bateman Fund Account."

Parliamentary Intelligence.

HOUSE OF LORDS.

TUESDAY, MARCH 31ST.

DOGS PROTECTION BILL.

Lord BANBURY, in moving the second reading of the Dogs Protection Bill, said that a similar measure had three times passed the second reading stage in the House of Commons, and on one occasion was reported to the House from a Standing Committee without amendment. The passing of the Bill would in no way prevent experiments from being made on other animals; all it would do was to prevent them from being made on dogs. He was aware that very many medical men were against the Bill, but on the other hand many were in favour of it. The use of dogs in vivisection was unnecessary.

Viscount KNUTSFORD, in moving the rejection of the Bill, said he did not suppose the whole medical and surgical world had ever been so unanimous on any subject as it was on this question. They were all reluctant to use dogs for experiments, but they were compelled to do it because it was necessary for the advance of knowledge. Sir Frederick Treves, who was always quoted at anti-vivisection meetings, wrote: "No one could be more keenly aware than I am of the great benefits conferred on suffering humanity by certain researches carried out by means of vivisection." Diabetes was no longer a sentence of death on young boys and girls, and was no longer an intolerable burden on adults, thanks wholly and solely to experiments on dogs.

Lord LAMBOURNE supported the Bill.

Lord MILDMAY of FLETE, who opposed the Bill, said only last Friday he presided over the Medical Research Council in the absence of Lord Balfour, and he had been authorised to make known how strong and unalterable was the objection of its members to this Bill as likely seriously to impede the progress of medical science and greatly to retard the successful treatment of disease. His experience on the Medical Research Council, and in connexion with the management of the Middlesex Hospital, had convinced him that in no walk of life were to be found more admirable qualities and beautiful characters than those engaged in medical research.

Lord RAYLEIGH said some persons thought that a respectable minority of the medical profession were in favour of the Bill. He had had an opportunity of going through the names which the noble lord had brought forward a year ago as being on his side, and so far as he had been able to learn not one of those men had ever made a discovery of any kind.

Lord BUCKMASTER said their lordships ought to hesitate a very long time before they attempted to limit the area of investigation into the means by which it might be possible to extend the wide boundaries of the great empire of learning, to check the progress of disease, and even to stay the swift and stealthy foot of death.

Lord DESBOROUGH said the Home Office were as opposed to the Bill now as they were last year.

The Bill was rejected by 77 votes to 8.

HOUSE OF COMMONS.

WEDNESDAY, MARCH 25TH.

Women Doctors in the Civil Service.

Miss WILKINSON asked the Chancellor of the Exchequer whether there were any classes of men and women civil servants in receipt of equal pay; and, if so, why the principle was applied in some cases and not in others.—Lieut.-Col. W. GUINNESS (Financial Secretary to the Treasury) replied: There are a few medical posts in the Civil Service in which men and women doctors receive the same rate of pay. In these cases special circumstances exist and no general principle has been applied.

Food Preservatives.

Mr. MACKENZIE LIVINGSTONE asked the Minister of Health if he was aware that in the draft Rules of March 17th, 1925, on preservatives in foods there was a list of prohibited coal-tar products which gave the impression that all other such products might be used; and would he take steps to lay down the quantities of lead and arsenic permitted in such compounds, and thus carry out the recommendations of the committee.—Sir KINGSLEY WOOD replied: Yes, sir. The effect of the regulations, as drafted, is that all coal-tar colours which are not included in the schedule may be used in food until they are shown to be injurious to health. Although lead and arsenic are occasionally present in coal-tar products, my right hon. friend is advised that the percentage of those substances liable to be introduced into foodstuffs through this medium is so minute that it is unnecessary to extend the scope of the regulations in the direction suggested.

Mr. GERALD HURST asked the Minister of Health whether he was aware of the alarm occasioned to the confectionery, bakery, and allied trades by the draft regulations as to the use of preservatives and colouring matter in articles of food; whether he was aware of the strong scientific evidence published against prohibition of boric acid and against the new rules as to liquid eggs, butter, margarine, and cream; and if the regulations could be held up until the House could consider their propriety.—Sir KINGSLEY WOOD replied: My right hon. friend has received representations from these trades and I am arranging to meet a deputation. My right hon. friend is satisfied that the scientific evidence regarding the effect of boric acid was thoroughly considered by the Departmental Committee on Preservatives in Food. My right hon. friend is desirous of giving the fullest consideration to the views of all parties concerned, and thinks the hon. Member will agree that that end will be secured by the discussion of the draft with representatives of trade bodies and others before the regulations are made and laid before Parliament.

THURSDAY, MARCH 26TH.

Maternity and Child Welfare Centres.

Mr. BENJAMIN SMITH asked the Minister of Health what progress had been made as regards the establishment of new maternity and child welfare centres since the issue of the circular of Feb. 8th, 1924, by the late Government.—Mr. N. CHAMBERLAIN replied: Since the issue of the circular of Feb. 8th, 1924, the number of maternity and child welfare centres in England known to my department has increased from 1986 to 2112, and proposals for about 30 additional centres are under consideration. Additional sessions for infant consultations, antenatal work, massage, &c., have also been provided at 95 existing centres.

Penalties on London Panel Doctors.

Mr. HERBERT WILLIAMS asked the Minister of Health why penalties of £10 and £20 respectively were imposed on two doctors who had been accused by the London Insurance Committee of gross negligence in cases of appendicitis and diphtheria, respectively, but who had been found innocent by a committee appointed by the Ministry of Health.—Mr. N. CHAMBERLAIN replied: As misapprehension has arisen regarding these cases I will state the facts fully. The death of two insured persons in London in 1924 led to complaints being lodged with the London Insurance Committee in regard to the treatment received by them from the two insurance practitioners concerned. These complaints were investigated by the Medical Service Subcommittee of the Insurance Committee which, with the concurrence of its medical members, recommended that in both cases a substantial deduction should be made from the doctors' remuneration. The Insurance Committee itself, however, regarded the cases as cases of gross negligence and accordingly made representations to me under the regulations for the removal of both doctors from the Medical List. These representations necessitate the appointment of an Inquiry Committee. That Committee, consisting of a barrister and two medical practitioners, found that the allegation of "gross" negligence was not established in either case, but their findings of fact indicated that in one case the doctor had failed to exercise reasonable care, and that in the other case the doctor had failed to respond to a request to visit the patient at what proved to be a critical period in the illness. After careful consideration of the reports of the Committee, I came to the conclusion that while the facts established were not such as to warrant the removal of either practitioner from the Medical List, there was abundant ground for the original recommendation of the Medical Service Subcommittee that grant should be withheld. My hon. friend will see from the above that there is no ground for the statement that the practitioners were found innocent. I may add that the procedure followed in these cases presents no exceptional features but follows the practice of the Insurance Commissioners and of previous Ministers of Health.

Standard of Condensed Milks.

Mr. GROVES asked the Minister of Health the terms of any order issued by his department regulating the standard of quality for imported condensed milk.—Mr. N. CHAMBERLAIN replied: The Public Health (Condensed Milk) Regulations, 1923, require that full-cream condensed milk must contain 31 per cent. of milk solids including 9 per cent. of milk fat, and that skimmed condensed milk must contain 26 or 20 per cent. of milk solids according as it is sweetened or not.

Livestock Depôt at Barnet.

Lieut.-Col. FREMANTLE asked the Minister of Health if his attention has been drawn to the serious nuisance occasioned by the establishment in the old posting-stables at Barnet of a livestock depôt immediately adjoining a street of small houses; whether he was aware that as many as 600 monkeys had been confined on the premises at a time and that several had escaped into neighbouring houses and gardens, to the alarm and great possible danger to the mental health of the inhabitants; and whether he would take action to secure the protection of the people of Barnet from this standing menace.—Mr. N. CHAMBERLAIN replied: I am communicating with the District Council on the subject mentioned by my hon. and gallant friend. I may mention that the model by-laws prepared by my department for preventing the keeping of animals in such a way as to be injurious to health do not apply to monkeys, but there is no reason why local by-laws should not include these animals if necessary.

Treatment of Tuberculosis.

Mr. W. C. ROBINSON asked the Minister of Health what increased provision for the treatment of tuberculosis had been made since the issue of the circular of Feb. 8th, 1924.—Mr. N. CHAMBERLAIN replied: Since the issue of the circular of Feb. 8th, 1924, proposals for the provision of more than 1300 additional beds have been approved. In addition, local authorities have been authorised to take additional beds at institutions belonging to voluntary bodies, and to carry out other developments of their tuberculosis schemes. The number of persons under treatment in residential institutions has increased by nearly 1300 since Feb. 1st, 1924, whilst the total net expenditure by local authorities which is about to be authorised for 1925-26 is £100,000 in excess of the estimated net expenditure during the current year. The figures quoted relate to England only.

National Health Insurance Surplus.

Major WHELER asked the Minister of Health whether, seeing that the unspent accumulated insurance funds amounted to nearly £100,000,000 for England under the National Health Insurance Act why it was necessary to have so large a sum in reserve.—Mr. BENNETT asked a similar question.—Mr. N. CHAMBERLAIN replied: The need for the reserves referred to by the hon. Members arises from the fact that the liabilities under the system of National Health Insurance increase with the age of the insured persons, while the contributions in all cases are at fixed rates payable from age 16 to age 70, and are actuarially calculated to be sufficient for a person entering into insurance at the age of 16. The question where funds accumulate in particular cases in excess of requirements is determined by the quinquennial valuations made under the Act. Where disposable surpluses appear, the societies are authorised to distribute them in additional benefits under schemes confirmed by my department. On the last valuation over £6,000,000 of surplus funds was so dealt with, and it is expected that on the valuation now in progress a considerably greater sum than this will be made available for distribution.

Segregation of Infectious Patients.

Colonel DAY asked the Minister of Health if he would consider appointing a court of inquiry to investigate and report on the prevailing conditions of the public health service of the country, and to inquire especially into the compulsory segregation of persons seriously affected with tuberculosis and in an infectious and incurable condition; and would he take steps to provide adequate protection to the children and near relatives of such persons who, through lack of housing accommodation, were forced to live in close

proximity to such persons.—Mr. N. CHAMBERLAIN replied: As at present advised I see no necessity for such an inquiry as is suggested. As regards the compulsory segregation of persons suffering from tuberculosis and in an infectious state, I may point out that legislation on this subject has already been obtained by a number of local authorities, and possibly an opportunity of dealing with the matter generally, as has been recommended by the local legislation committee, may occur in connexion with the Public Health Bill which secured a second reading on Friday last. As regards the last part of the question, it is for the local sanitary authorities to take all such steps as are practicable to prevent the spread of infection.

Royal Commission on Mental Disorders.

Captain WATERHOUSE asked the Minister of Health when the Report of the Royal Commission on Mental Disorders might be expected.—Mr. N. CHAMBERLAIN replied: It is not possible at this stage to state when this Report may be expected, but I understand that the Royal Commission hope to be in a position to present their Report early next year.

The Bastardy Bill.

Captain BOWYER asked the Prime Minister whether he would give facilities for the Second Reading of the Bastardy Bill.—Mr. BALDWIN replied: The Government do not propose to grant special facilities for this Bill.

Insanitary Houses in West Ham.

Mr. GROVES asked the Minister of Health whether he would cause special inquiries and efforts to be made in respect to the condition of houses within the county borough of West Ham, inasmuch as it was the common feature of the town council to receive reports monthly from its chief sanitary and medical advisers indicating that over 75 per cent. of the houses examined were found to be not in all respects reasonably fit for human habitation, and for the year 1923 of 11,207 houses so examined 8380 were in such a state that notices were required to be served upon the owners or rack-renters; and would he consider whether special action was necessary.—Mr. N. CHAMBERLAIN replied: I am aware of the conditions in this borough. The local authority are making active use of their powers under the Public Health Acts, and I understand that they are considering whether action should be taken in particular cases under Section 28 of the Housing, Town Planning, &c. Act, 1919, as amended by Section 10 of the Housing, &c. Act, 1923. These existing powers should, I think, prove to be sufficient.

Certification of Death.

Lieut.-Col. FREMANTLE introduced a Bill to amend the law relating to the certification of deaths, which was read a first time.

MONDAY, MARCH 30TH.

Vaccine and Serum for Pig Erysipelas.

Lieut.-Col. FREMANTLE asked the Minister of Agriculture if his attention had been called to the value of the specific vaccine and serum, at present only obtainable from the continent, for the prevention of pig erysipelas; and if he would arrange for this remedy to be stocked by veterinary surgeons throughout this country.—Mr. WOOD replied: The reply to the first part of the question is in the affirmative. I would point out that for the last 20 years the Ministry has issued a leaflet on swine erysipelas which, among other things, describes vaccine and serum treatment. I understand that at present supplies are only obtainable from the continent, because the demand has not been such as to encourage firms in this country to stock the material. I have no power to arrange for this remedy to be stocked by veterinary surgeons throughout the country, but no doubt veterinary surgeons and firms will do so, if pig owners will show them that there is a sufficient demand.

Import of Arsenic from Japan.

Captain MOREING asked the President of the Board of Trade what quantities of arsenic were imported into the United Kingdom from Japan during the months of December, 1924, and January and February, 1925.—Mr. A. M. SAMUEL (Parliamentary Secretary to the Overseas Trade Department) replied: The quantity of white arsenic and other arsenic compounds imported into Great Britain and Northern Ireland, and registered as consigned from Japan, amounted to 51 tons in December, 1924, 104 tons in January, 1925, and 81 tons in February, 1925. There were no imports of metallic arsenic during the months in question.

The Lee Commission and Indian Provincial Services.

Mr. WARDLAW-MILNE asked the Under Secretary of State for India whether any decision had been come to with regard to the claims of those members of the provincial services who had retained their non-Asiatic domicile to have extended to them the benefits conferred on their colleagues in the covenanted services by the Act of 1919 and by the Report of the Lee Commission, in so far as these latter had been adopted; and whether, in the event of the matter not having been decided, due attention would be paid to the recommendations on the subject contained in the letter from the Viceroy of India to the Secretary of State for India, dated Delhi, March 5th, 1919, and in the Report of Lord Southborough's Committee.—Earl WINTERTON replied: My noble friend is considering the position of the officers to whom my hon. friend draws attention, and in making his decision will bear in mind the papers referred to.

Permanent Appointments to Pensions Medical Staff.

Colonel DAY asked the Minister of Pensions what was the name and rank of those members of the medical staff of the Ministry who had been given permanent appointments; what increase had been made in their salary; and whether other temporary officers of the Ministry who were given established posts would receive a similar relative salary.—Major TRYON replied: It is intended to recommend 48 members of the existing whole-time temporary medical staff for permanent appointments, but no such appointments have yet been made. The successful candidates will enter their new posts at their existing rates of pay, subject, in a few cases, to certain slight adjustments, up or down, which may be made in order to remove existing anomalies. In regard to the last part of the question, the terms and conditions governing the grant of established posts to other classes of temporary employees of the Ministry will necessarily be those laid down for such classes in Government departments.

Boron Preservatives in Food.

Mr. GOODMAN ROBERTS asked the Minister of Health (1) whether he was in possession of any evidence that the small quantities of boron preservatives permitted to be used in liquid eggs was deleterious to health; and, if so, would he state its nature; and (2) whether it had been decided to prohibit the use of boron preservatives in liquid eggs; and whether, before issuing regulations on this matter, he would consider the probable increased cost of important foodstuffs into the composition of which eggs enter, seeing that there was no adequate provision for cold storage in this country to make cold-storage eggs a practical substitute for liquid eggs.—Mr. N. CHAMBERLAIN replied: The effect of boron preservatives was considered by the departmental committee on the use of preservatives in food, and they were unanimously of opinion that such preservatives are sufficiently harmful to justify their total prohibition. I have not yet settled the final form of the regulations, and before doing so I shall certainly give full weight to such considerations as those mentioned by the hon. Member.

TUESDAY, MARCH 31ST.

Chemical Warfare Tests on Soldiers.

Mr. DUNNICO asked the Secretary of State for War whether, with regard to the fact that at the camp of the chemical warfare research department at Salisbury Plain experiments were being carried out to test the relative effects of poison gas on soldiers, he would say whether any men subjected to these tests had been seriously and permanently injured in their lungs and otherwise, and whether he was prepared to put a stop to such experiments.—Sir L. WORTHINGTON-EVANS replied: No men have suffered injury to their lungs or otherwise through being subjected to these tests. The answer to the second part of the question is in the negative.

Mr. AMMON asked the Secretary of State for War with regard to the experiments as to the effect of poison gases on young soldiers which were conducted at the chemical warfare research department, the number of such experiments, and the number of young soldiers engaged in them since 1918.—Sir L. WORTHINGTON-EVANS replied: The number of such experiments since 1918 is 372 and the number of soldiers engaged in them 188. All these soldiers voluntarily offered themselves for this special duty.

Mr. AMMON asked the Secretary of State for War the nature of the experiments conducted at the chemical warfare research department by subjecting young soldiers to the effects of poison gases; what precautions were taken to prevent such experiments resulting in injury to the young soldiers concerned; and the number of young soldiers who had been injured in their lungs and otherwise since 1918.—Sir L. WORTHINGTON-EVANS replied: The experiments fall under three categories: (1) exposure to low concentrations of gases to ascertain their physiological properties; (2) exposure to gas of personnel protected by respirators in order to test the protective efficiency of the respirators; (3) tests on skin of human personnel of new compounds to ascertain their irritant action, if any. All such experiments have been carried out under most stringent regulations which have been framed on the best medical advice obtainable, in order that the health of the observers concerned may be safeguarded. There have been no cases in which injury to the lungs or otherwise has been caused to soldiers since 1918.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MEETINGS OF SECTIONS.

Monday, April 6th.

WAR: at 4.30 P.M.

Annual General Meeting:
Election of Officers and Council for Session 1925–26.

Papers:
Colonel J. Crawford Kennedy, R.A.M.C.: Tuberculosis in the Army.
Surgeon-Commander C. H. Dawe, R.N.: Tuberculosis in the Navy.
Wing-Commander H. A. Treadgold, R.A.F.: Tuberculosis in the Royal Air Force.

Tuesday, April 7th.

ORTHOPÆDICS: at 8.30 P.M.

Discussion:
Differential Diagnosis of Non-Tuberculous Coxitis in Children and Adolescents.

To be opened by
Mr. Alan Todd, followed by Mr. R. C. Elmslie and Mr. H. A. T. Fairbank (President).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.
MONDAY, April 6th.—12 noon, Mr. Simmonds: Applied Anatomy. 2 P.M., Mr. Addison: Surgical Wards. 2 P.M., Dr. Scott Pinchin: Medical Out-patients.
TUESDAY.—10 A.M., Medical Registrar: Clinical Methods. 12 noon, Dr. Burrell: Chest Cases. 2.30 P.M., Mr. Tyrrell Gray: Surgical Wards.
WEDNESDAY.—2 P.M., Dr. Burnford: Medical Wards. 2 P.M., Dr. Owen: Medical Out-patients. 2.30 P.M., Mr. Donald Armour: Surgical Wards.
THURSDAY.—11 A.M., Sir Henry Simson: Gynæcological Wards. 12 noon, Mr. Sinclair (Lecture): Abdominal Surgery. 2 P.M., Mr. MacDonald: Genito-Urinary Dept.

MANCHESTER ROYAL INFIRMARY.
TUESDAY, April 7th.—4.15 P.M., Mr. W. R. Douglas: Benign Swellings of the Breast.

Appointments.

DODDS, R. L., M.B., B.Ch. Belf., has been appointed Resident Medical Officer to the Freemasons Hospital and Nursing Home, Fulham-road, S.W.

FRENCH, E. G., M.D., F.R.C.S.E., M.R.C.P. Lond. (Lieut.-Colonel R.A.M.C., retd.), Dermatologist to the London Temperance Hospital.

MACLENNAN, N. M., M.B., Ch.B. Aberd., D.P.H., Assistant Medical Officer of Health, Woolwich.

MCMILLAN, KENNETH, F.R.C.S. Eng., Hon. Surgeon to the Birmingham and Midland Hospital for Women and Hon. Assistant Surgeon to the Birmingham Maternity Hospital.

MOORE, FREDERICK CRAVEN, M.Sc., M.D., F.R.C.P., to the Chair of Systematic Medicine in the University of Manchester.

SINCLAIR, A. H. H., M.D., C.M., F.R.C.S. Edin., a Medical Referee under the Workmen's Compensation Act, in place of Sir George A. Berry, who has resigned.

THACKRAY, C., M.D., B.S. Lond., Medical Superintendent of St. Pancras Guardians' Highgate Infirmary.

Queen Charlotte's Maternity Hospital: STORY, A. G., M.B., B.Ch., Resident Medical Officer; SAUNDERS, ROY M., M.B., Ch.B. Edin., and FOOTE, ROBERT, M.R.C.S., L.R.C.P. Lond., Assistant Resident Medical Officers.

Certifying Surgeons under the Factory and Workshop Acts: CABLE, J. E., M.B., Ch.B. Aberd. (Forfar); EWING, H. W., M.R.C.S., L.R.C.P. Lond. (Buntingford); WARNOCK, J. (Leeds, South).

Vacancies.

For further information refer to the advertisement columns.

Barnsley, Beckett Hospital and Dispensary.—H.P. and Jun. H.S. Each at rate of £140.

Brighton, Royal Alexandra Hospital for Sick Children.—H.S. £100.

British Hospital for Mental Disorders, &c., 72, Camden-road, N.W. Hon. P.

Chester, City and County of.—Asst. M.O.H. and Asst. Sch. M.O. £600.

Croydon County Borough.—Deputy M.O.H. and Dep. Sch. M.O. £780.

Derby County Borough Isolation Hospital and Sanatorium.—Res. M.O. £550.

Derby, County Mental Hospital, Mickleover.—Jun. Asst. M.O. £350.

Derbyshire County Sanatorium, near Chesterfield.—Res. Asst. M.O. £350.

Derbyshire Royal Infirmary.—H.S. £200.

Dewsbury County Borough.—M.O.H. £900.

Durham County and Sunderland and Eye Infirmary, Stockton-road, Sunderland.—H.S. £450.

Fulham Infirmary, St. Dunstan's-road, Hammersmith, W.—Third Asst. M.O. £250.

Hôpital and Dispensaire Français, 172, Shaftesbury-avenue, W.C.—P. to Out-patients.

Hospital for Consumption and Diseases of the Chest, Brompton, S.W.—H.P. £50.

Hospital for Diseases of the Throat, Golden-square, W.—Hon. Surg. Reg.

Huddersfield, Ministry of Pensions Mental Hospital, Kirkburton.—Sen. M.O. £600.

Lambeth Parish, Brook-street, Kennington-road, S.E.—Public Vaccinator.

Leeds Public Dispensary.—Jun. Res. M.O. £150.

Liverpool Eye and Ear Infirmary.—H.S. £100.

London Lock Hospital, 91, Dean-street, W.—H.S. at rate of £200. Also Temp. Hon. S. to Out-patients.

London Temperance Hospital, Hampstead-road, N.W.—Surg. Reg. 40 guineas.

Manchester Royal Infirmary.—Asst. Res. Surg. O. at rate of £150.

Metropolitan Hospital, Kingsland-road, E.—H.P., H.S., Jun. H.P., Jun. H.S. and two Cas. O.'s. Each at rate of £100. Also Surg. for Dis. of Nose, Throat, and Ear.

Middlesex Hospital Medical School.—University Chair of Biochemistry. £800.

Ministry of Health, Whitehall, S.W.—M.O.'s. £800.

Newcastle-upon-Tyne City Hospital for Infectious Diseases.—Res. Med. Asst. £350.

Newcastle-upon-Tyne, City and County of.—Tub. M.O. £750.

North Marylebone School of Mothercraft.—M.O. for Infants Clinic. 1½ guineas per session.

Oldham Union, Poor Law Institution, Rochdale-road.—Res. Asst. M.O. £300.

Prince of Wales's General Hospital, Tottenham, N.—Hon. Surg. Reg. and Hon. Med. Reg. Each £200. Also Hon. Asst. S. to Ear, Nose, and Throat Dept.

Putney Hospital, Lower Common, Putney, S.W.—Res. M.O. £150.

Queen Charlotte's Maternity Hospital, Marylebone-road, N.W.—Obstet. S.

Royal Chest Hospital, City-road, E.C.—Phys.

Royal Northern Hospital, Holloway, N.—H.P. and H.S. Each at rate of £75.

Salford Union Infirmary, Hope, Pendleton, near Manchester.—Radiologist. £150.

Sheffield Royal Infirmary.—H.S. £80.

Sheffield, University Royal Hospital.—Asst. Pathologist and Demonstrator of Pathology.

West End Hospital for Nervous Diseases, Welbeck-street, W.—Hon. Reg.

York City.—Asst. M.O.H., &c. £600.

York Maternity Hospital.—H.S. £250.

Births, Marriages, and Deaths.

BIRTHS.

BARCLAY.—On March 26th, 1925, at 2, Greenhead-road, Huddersfield, the wife of William Barclay, M.B., F.R.C.S. Edin. of a son.

CALWELL.—On 29th March, 1925, at 69, Holland Park-avenue, London, W. 11, to Maud, the wife of Dr. W. K. Calwell—a son.

ESLER.—On March 23rd, at Denholme, Datchet, Bucks, the wife of M. S. Esler, M.R.C.S., of a daughter.

GRANGE.—On March 24th, at Phœnix Lodge-mansions, Brook Green, W., the wife of F. A. Grange, M.C., M.B., B.S., of a son.

HAYMAN.—On March 26th, at Caister-road, Great Yarmouth, the wife of F. Keith Hayman, F.R.C.S., of a son.

PEAKE.—On March 18th, at Exeter, the wife of Captain H. G. Peake, Royal Army Medical Corps, of a son.

THOMPSON.—On March 25th, at The Avenue, Southampton, the wife of A. G. G. Thompson, M.D. Camb., of a daughter.

DEATHS.

MELVILLE.—On March 24th, following an operation at a London nursing home, Gordon Moncreiff Melville, M.D., of Ashley Lodge, Basingstoke, aged 42 years.

TAYLOR.—On March 22nd, at Alma-road, Clifton, Bristol, James Taylor, M.R.C.S. Eng., L.S.A.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

LEIGH INFIRMARY EXTENSION.—The governors have decided upon extensions of the infirmary which will involve a sum of about £26,000. The extensions include the erection of a new children's ward and a nurses' home.

THE Minister of Health has appointed Mr. H. W. S. Francis, O.B.E., Assistant Secretary, Ministry of Health, to the post of Receiver of the Metropolitan Common Poor Fund with effect from April 1st, consequent on the appointment of Sir Aubrey Symonds, K.C.B., as Secretary to the Board of Education. Mr. E. Tudor Owen, O.B.E., is appointed an Assistant Secretary to the Ministry.

Notes, Comments, and Abstracts.

DEAFNESS IN LITERATURE.

BY MACLEOD YEARSLEY, F.R.C.S ENG.

THERE can be no doubt that, although it is open to debate whether blindness or deafness is the greater affliction, the former infirmity is, for purposes of charity, the more spectacular. The same holds good in literature apparently, for when, a short time ago, I made some investigation into the matter, I was surprised to find how meagre is the record. The reason is indicated in my opening sentence, and, in support of my contention that blind persons appeal far more eloquently to popular sympathy, I may quote a remark once made to me by my friend the late Mr. George R. Sims to the effect that when a dramatist wished to move his audience to tears he placed a blind character upon the stage, but when his object was to excite laughter he used one who was deaf. Yet deafness, depicted by the hand of a master, can be made as moving as blindness, as I hope to show presently.

The allusions to deafness which I have been able to find in literature are, save the occasional introduction of a deaf fool as comic relief, almost entirely confined to Boswell, Johnson, Scott, John Kerr, Dickens, and Thackeray among prose writers, to Chaucer, Shakespeare, and Hood among poets. There is also a passage on deaf-mutism of some merit, quoted as a chapter heading in "Peveril of the Peak," and ascribed by Scott to an old play, the authorship of which I have failed to discover. In reply to the question "Can she not speak?" a character answers:

> "If speech be only in accented sounds,
> Framed by the tongue and lips, the maiden's dumb;
> But if by quick and apprehensive look,
> By motion, sign, and glance, to give such meaning,
> Express as clothed in language, be termed speech,
> She hath that wondrous faculty; for her eyes,
> Like the bright stars of heaven, can hold discourse,
> Though it be mute and soundless."

Chaucer describes his Wife of Bath as deaf and states the cause:

> "But she was somewhat deaf, and that was scathe."

Her defect she owed to her fifth husband, who hit her on the head for tearing the book he was reading. The good wife began her matrimonial experiences early, since she says:

> "For, lordlings, since I twelve years was of age;
> Husbands at churché door I have had five."

Husbands had, indeed, become a habit, for she adds:

> "Welcome the sixté, when that ever he shall."

Shakespeare makes but two notable allusions to deafness, although deafness and dumbness are employed by him metaphorically no less than 39 times, while Milton uses deafness metaphorically but twice. In *Julius Cæsar*, Act i., Scene 2, the great Roman says to Antony:

> "Come on my right hand, for this ear is deaf."

In the Second Part of *King Henry IV.*, Act i., Scene 2, deafness is introduced with a more comic purpose in the meeting between the Lord Chief Justice and his Apparitors with Falstaff. The fat old reprobate tries to slink off, mindful of his last interview with the Justice, but the latter calls him back. To his page Sir John whispers aside, "Boy, tell him I am deaf," and the lad says to one of the Apparitors, "You must speak louder; my master is deaf," upon which the Justice, with reason, remarks, "I am sure he is, to anything good."

From Shakespeare to Tom Hood is a far and descending cry. The latter wrote a long poem of 811 lines, "A Tale of a Trumpet," describing the deafness of an old lady named, possibly for rhyming purposes, Dame Eleanor Spearing, who acquired a kind of demon trumpet. This poem is of peculiar interest to me as mentioning my relative, Dr. James Yearsley, who died in 1869 and was one of the first of the old London aural surgeons. The stanza runs thus:

> "In short, she was twice as deaf as Deaf Burke,
> Or all the deafness in Yearsley's work,
> Who in spite of his skill in hardness of hearing,
> Boring, blasting, and pioneering,
> To give the dunny organ a clearing,
> Could never have cured Dame Eleanor Spearing."

Boswell says little or nothing of Johnson's defective hearing, but mentions his visit to the deaf school in Edinburgh in the following words:

"Near the end of his 'Journey,' Dr. Johnson has given liberal praise to Mr. Braidwood's academy for the deaf and dumb. When he visited it, a circumstance occurred which was truly characteristical of our great lexicographer. 'Pray,' said he, 'can they pronounce any *long* words?' Mr. Braidwood informed him they could. Upon which Dr. Johnson wrote one of his *sesquipedalia verba*, which was pronounced by the scholars, and he was satisfied. My readers may perhaps wish to know what the word was; but I cannot gratify their curiosity. Mr. Braidwood told me it remained long in his school, but had been lost before I made my enquiry."

The actual remarks made upon this visit by Johnson are to be found in the closing chapter of his "Journey to the Western Islands of Scotland," and are no small testimony to the efficiency of the oral instruction of the deaf in the Northern Kingdom a century and a half ago. The closing paragraph is, as Boswell would say, "truly characteristical."

"It was pleasing to see one of the most desperate of human calamities capable of so much help; whatever enlarges hope will exalt courage; after having seen the deaf taught arithmetic, who would be afraid to cultivate the Hebrides?"

That Johnson was himself deaf in later life is shown by the remarks of Miss Reynolds in the Appendix of Wilson Crocker's edition of Boswell. Miss Reynolds (the great painter's deafness is well known) said that "to his defective hearing, perhaps, his unaccommodating manners may be equally ascribed." Here I may digress for a moment to note the deafness of other literary persons. It will be recalled that Harriet Martineau employed an ear-trumpet and that Herbert Spencer "tempted providence" by using ear-stoppers. Jean Jacques Rousseau was another sufferer. In his "Confessions" (Book VI.) he describes a sudden attack of vertigo, with loud head noises of four different kinds. "This internal tumult was so violent," he says, "that is has injured my auricular organs, and rendered me, from that time, not entirely deaf, but hard of hearing." When first attacked, the author of the "Social Contract" tried bed and a doctor, but not liking the treatment, which was, in accordance with the therapeutics of the time, excessively nasty, abandoned it after a short trial. "The beating of my arteries," he adds pathetically, "and the buzzing in my ears has never quitted me a moment during the 30 years which have elapsed since that time." Only those who have experienced the terrible infirmity of constant noises in the head can realise what the infliction means. Martin Luther suffered similarly, and considered them to be the voices of the Devil tempting him.

If Johnson's appreciation of Braidwood's work in 1773 be just and wise, so also is the opinion expressed by Dr. John Kerr regarding the same work a century later. The passage is in his "Memories Grave and Gay," but is too long for quotation. It speaks of his unqualified respect and admiration for the untiring patience and sympathy of teachers of the blind and deaf. Kerr also gives it as his deliberate opinion that of the two defects deafness is the more distressing.

"It may be a matter of opinion whether to be blind or to be deaf and dumb is the greater calamity, but, as a question of education, of mental health and balance, I am quite convinced that the deafmute is the greatest sufferer. He is more difficult to teach and more isolated; a wider gulf than in the case of the blind separates him from continuous, interesting intercourse with his fellows."

He gives his reasons fully in his ensuing words and with his opinion I heartily agree. It is, indeed, the most justly-reasoned summary of the comparative disadvantages of blindness and deafness that I have met with and should be read by those unthinking persons who, without adequate knowledge of the subject, assert that they would rather be deaf than blind.

Among the masters of fiction it is curious that deafness appears as a prominent incident in the works of three only—Sir Walter Scott, Thackeray, and Dickens. It is, of course, true that one may stumble across a deaf character or two, here and there, introduced for the purpose of raising a laugh, or that, in certain books (which, however, can scarcely be described as "literature") characters have pretended to be deaf and dumb in order that they might overhear certain important disclosures without exciting suspicion. Fenella in Scott's "Peveril of the Peak," is an example of these, save that she is drawn by the hand of a master. In the modern instances I gravely doubt whether such simulated deafness could be sustained with success for any length of time. I have an indistinct recollection of a detective story in which the usual astute amateur detective learned lip-reading in order to run to earth his prey. The idea is ingenious, but lip-reading is by no means easy to learn when one has one's hearing intact. But these instances are beside the point. The most important character of this kind is the Fenella to whom I have just alluded. Her real name was Zara, and she was not deaf and dumb at all, although the reader is kept in ignorance of the fact until nearly the end of the book. What is interesting to us is Scott's description of her as seen by Julian Peveril, as she stood at the head of the steps leading to the entrance of the Castle of Holm Peel in the Isle of Man.

"This little creature—for she was of the least and slightest size of womankind—was exquisitely well formed in all her limbs, which the dress she usually wore (a green silk tunic,

of a peculiar form) set off to the best advantage. Her face was darker than the usual hue of Europeans, and the profusion of long and silken hair, which, when she undid the braids in which she commonly wore it, fell almost to her ankles, was also rather a foreign attribute. Her countenance resembled a most beautiful miniature; there was a quickness, decision, and fire, in Fenella's look, and especially in her eyes, which was probably rendered yet more alert and acute, because through the imperfections of her other organs, it was only by sight that she could obtain information of what passed around her."

The passage is so framed as deliberately to deceive the reader and throw him off the scent. Fenella does not seem to have been the type of young person one would care to invite to the proverbial tea-party, although she had many accomplishments—needlework, pencil drawing, ornamental writing. But her ready wit and acute intellect were coupled with an irascible temper, haughtiness, and vindictiveness. Her miscellaneous attainments caused her to be regarded as a fairy changeling, to which her invariable habit of wearing green helped to contribute. She was able to carry on an adequate conversation by gestures, writing, and sketching, as is vividly portrayed in the account of her first meeting with the hero. Her deceit was ultimately detected by that astute monarch Charles II., who, having directed the Countess of Derby to get into contact with her pulse, then gravely announced that her lover had been stabbed; her scream and the acceleration of her pulse gave her away. Fenella was not an original creation, for Scott confessed that he had obtained the idea from Goethe's sketch of Mignon, in Wilhelm Meister's "Lehrjahre."

Lovers of Thackeray (and I must confess myself his devoted admirer) will call to mind how, in the twenty-fifth chapter of "The Virginians" he introduces the extreme deafness of the great Lord Chesterfield, who, oblivious to the identity of Mr. Harry Esmond Warrington seated close by at the ordinary, talks scandalously both of him and his worldly old aunt, the Baroness de Bernstein, for which he makes a dignified apology upon learning his error. In a later chapter allusion is made to the deafness of Sir Joshua Reynolds.

Charles Dickens seems to have been especially fond of portraying defectives such as Smike, Barnaby Rudge, Tiny Tim, and Mr. Dick. I think Hugh, in "Barnaby Rudge," was a defective too, but, as Sir Squire Sprigge has pointed out in his delightful "Physic and Fiction," it is in descriptions of mental disease that Dickens revels, and Squeers, his daughter Fanny, and Newman Noggs were just as mad as the poor, tormented Smike. It is not to be wondered at, therefore, that he should have introduced a deaf-and-dumb child into one of his stories. We may dismiss old Mrs. Wardle in "Pickwick," "the very old lady, in a lofty cap and faded silk gown," as a very ordinary character, introduced to excite amusement. His description of her is fairly true to nature—"like most people, she never seemed to calculate the possibility of other persons hearing what she said herself," a truism pointed out also by Thackeray in the instance alluded to, but in other words. Mrs. Wardle was much less deaf on the subject of a rubber of whist than any other; my Lord Chesterfield was even more addicted to play. Possibly cards may have a special appeal to the deaf, since their use does not require much conversation.

Of a different order is Dickens's introduction of deafness in another book, for in this instance it has a touch of genius. In the penultimate chapter of "A Tale of Two Cities" (in my humble opinion the finest of his works), Miss Pross has her hearing destroyed at one fell swoop by the explosion of Madame Defarge's pistol when she is struggling with that fury of the Revolution. The truth dawns upon the courageous woman as she hurries through the streets with Mr. Jerry Cruncher. "I feel," she says, "as if there had been a flash and a crash, and that crash was the last thing I should ever hear in this life." She cannot hear the sinister rumble of the tumbrils on their way to the National Razor...

"'If she don't hear the roll of those dreadful carts, now very nigh their journey's end,' said Mr. Cruncher, glancing over his shoulder, 'it's my opinion that indeed she never will hear anything else in this world.'

And indeed she never did."

Curiously enough, Dickens's masterpiece in pathetic writing, the description of Sophy in "Dr. Marigold," seems to have been missed or forgotten by many of his readers. Yet the story sold as a Christmas number 250,000 copies in the first week and was one of its author's most successful readings. Those who know the deaf child, as I do, cannot fail to be moved by it. Dr. Marigold was a Cheap Jack, who lost his little daughter Sophy. Meeting with a giant—"He was called Rinaldo di Velasco, his name being Pickleson"—he found that Rinaldo's master had a deaf daughter whom he ill-treated. Marigold bought her for a pair of braces, and named her Sophy after his own lost little daughter. There is a delightful description of how he set out to teach her:

"You'd have laughed—or the reverse—it's according to your disposition if you could have seen me trying to teach Sophy. At first I was helped—you'd never guess by what—Milestones. I got some large alphabets in a box, all the letters separate on bits of bone, and saying we was going to WINDSOR, I gave her those letters in that order, and then at every milestone I showed her those same letters in that same order again and pointed towards the abode of royalty. Another time I give her CART and then chalked the same upon the cart. Another time I give her DOCTOR MARIGOLD, and hung a corresponding inscription outside my waistcoat."

Patience and trouble, as usual, triumphed, and the description of his labours is, to my mind, one of the best things Dickens ever wrote. "We had our signs, too, and they was hundreds in number," explained the Cheap Jack. Sophy was an intelligent child and responded well.

"When I sold of a night, she would sit in the cart unseen by them outside, and would give a eager look into my eyes when I looked in, and would hand me straight the precise article or articles I wanted. And then she would clap her hands and laugh for joy."

Marigold and Sophy went happily on together until she was 16, and then her protector felt that she should have better teaching.

"So I took her hand in mine, and went with her one day to the Deaf and Dumb establishment in London."

It is difficult to read what follows without being touched by it. One can so well realise the sacrifice which the large-hearted Cheap Jack was making. "Teach her the most that can be taught her in the shortest separation that can be named." There is a world of pathos in that. Dickens often gives one a sense of exaggerated sentiment, of striving after effect, but to those who know the deaf and their education there is nothing of that here.

"'Well,' says he, 'can you part with her for two years?'
'To do her that good,—yes, sir.'
'There's another question,' says the gentleman, looking towards her,—'can she part with you for two years?'"

Sophy was a grown woman when her adoptive father saw her again. One gathers that her education was nor on the oral system and, seeing that she did not come under a teacher of the deaf until she was 16, this is not to be wondered at. I am at a loss to know to what institution Marigold took Sophy. Lickens must have had some particular establishment in mind when he wrote the story and probably paid it a visit in order to obtain the necessary local colour. There is, however, no allusion to any such visit in Forster's "Life," nor in any of the Dickens letters. I have, nevertheless, a suspicion that it was the school, now occupied by the London County Council as a Deaf School, in the Old Kent-road.

TWINS.

To the Editor of THE LANCET.

SIR,—Prof. G. R. Murray's remarks in THE LANCET of March 14th, on the subject of twins, recall the fact that even in Europe there was current at some very early period a belief that the bearing of more than one child at a birth was the result of the mother's adultery. That conjugal infidelity on the wife's part was at one time punishable with death is a fact well established in both Roman and Celtic tradition. Such being the case, the superstition with regard to twin births was a source of considerable danger to the mother, and the lady's attempts to evade the consequence of her rashness form the subject of a great number of mediæval romances and folk-tales. The belief occurs in various connexions in the literature and popular lore of England, France, Italy, Spain, Denmark, Holland, and Germany, being especially common in German tradition. The importance of folk-lore in the history of civilisation and in ethnology is now admitted, and the frequency with which this belief recurs can leave little doubt that at some far distant period it was widely current among the peoples of Western Europe.

A number of stories dealing with this superstition have been collected by Dr. Doris Wright Barker, and in most of them the central incident is somewhat similar. A lady of high rank accuses a beggar woman of adultery because she has borne twins. The slander is always punished by the lady herself becoming pregnant and being delivered at one birth of two or more children. The number of children is usually two, seven, or nine, but in one of the Dutch versions it is 13, and in that related in all seriousness by Korner in his "Chronik" for the year 1300 it is 364! The details vary, but in all of the tales the birth of the children is regarded as reliable evidence of their mother's guilt, and in most cases she is afraid of, or is actually threatened with, death.

The story of most interest to modern readers is a German folk-tale, the "Stamm-Sage der Welfen," or the tribal legend of the Guelphs, which professes to explain the origin of the name Guelph (Welf) which, it will be remembered, was borne before the war by our own Royal Family. In

this tale it is related that the wife of Isembard von Altorf urges the death of a woman who has given birth at one time to three children, on the ground that she is an adulteress. The following year the lady is herself delivered of twelve children, and terrified of the consequences of such a feat, persuades her attendant to drown all but one. The maid places the children in a bucket, but on her way to the river is met by the father who inquires the nature of her errand. She replies that it is "but to drown a few baggage whelps in the river." Isembard, however, investigates for himself, and having finally come at the truth of the matter, sends the children to be secretly nursed. When they are grown, he presents them to his wife, who duly confesses her guilt and is forgiven. In memory of the incident, the family received the name of "Whelp" or Guelph, which is still retained by their descendants.

It has been stated that among the negroes of Guinea a woman who has borne twins is held guilty of adultery and is put to death. It would be interesting to know whether the view still to be met with that the birth of twins is something of a social blunder is a last relic of this singularly cruel and foolish superstition.

I am, Sir, yours faithfully,

Leeds, March 25th, 1925. W. MURPHY.

THE LOCAL OPTION CONFERENCE.

To the Editor of THE LANCET.

SIR,—It is somewhat amusing to note the references in the newspaper press to the Local Option Conference held at Hoddesdon last week, in which it is variously described as a "secret" conference or conclave. Actually, it was a private conference of temperance delegates, who, for convenience sake, met at High Leigh, which is one of the houses provided for the accommodation of summer schools and similar gatherings.

What is of importance is that before the second conference is held, the committees, which are apparently to be set up for the purpose of exploring further the questions of compensation under a local option scheme and the options which should properly find a place in such a measure, may succeed in agreeing on proposals which will be approved not only by the temperance bodies, but by the great mass of the electorate. After all, it is the latter who count, and the temperance bodies must be prepared to sacrifice their cherished ideas as to the justice of a restricted form of local option in favour of proposals which will satisfy those who are outside the official temperance movement but yet hold the key to the situation.

The weakness of the temperance party is that in its proposals it is too prone to ignore the real situation and to imagine that what it considers right is also practicable. The genuine temperance reformer who desires to make progress will acquaint himself with the position and point of view of the average elector and frame his Bill accordingly on constructive lines, relying upon the forces of education and experience to secure further progress.

I am, Sir, yours faithfully,

Surbiton, March 26th, 1925. R. MORTON STANLEY.

TYPHOID FEVER ON A MILK FARM.

A REPORT from the Ministry of Health (H.M. Stationery Office, 2*d.*) deals with an outbreak of paratyphoid fever which occurred last September at Chorley. Dr. W. V. Shaw, for the Ministry, made an exhaustive inquiry into the epidemic. Sir George Newman, in a prefatory note, gives a summary of the report and adds some important comments. He states that the epidemic, comprising 52 cases, of which two ended fatally, was caused by milk infected with *Bacillus paratyphosus* B, derived from a farm in Chorley rural district. On August 7th, 1924, a case of the disease occurred in the family of the farmer and was duly notified to the public health department of the district. The acting medical officer of health visited the farm, and, it appears, consented to the patient being nursed at home. He took no steps to safeguard the milk-supply, although no less than 60 gallons per day were being sent from the farm for distribution in the borough. Further, no other visit was paid to the farm by officers of the rural district council until Oct. 1st, when the occurrence of the outbreak in the borough aroused suspicion respecting the milk from the farm in question. The prevalence of the disease in the borough of Chorley commenced on Sept. 10th, and it was found that each of the 52 patients had consumed milk from the farm at the time when members of the farmer's household were in an infective condition, as was conclusively proved, not merely on clinical grounds but as a result of bacteriological investigation. Of the eight members of the farmer's household no fewer than four had actually suffered from paratyphoid fever in addition to the original case. In the circumstances described by Dr. Shaw specific infection of the milk at the farm was almost inevitable. The patient, nevertheless, was allowed to remain at home throughout the course of her illness without any supervision on the part of officers of the local authority. No official inquiry was made to ascertain whether adequate isolation of the patient was being maintained, or whether secondary cases had occurred among other members of the household. Sir George Newman comments on the outbreak by saying that it was caused by failure on the part of the responsible officer concerned to appreciate the danger inseparable from the retention at a dairy-farm of a case of paratyphoid fever.

SUMMER-TIME.

SUMMER-TIME in France and Belgium comes into force on the night of Saturday-Sunday, April 4th–5th, and in this country on April 18th–19th. In consequence of earlier summer-time on the continent posting times in London for despatches to the continent from April 6th to 18th inclusive will be an hour earlier in the forenoon than at present.

FELLOWSHIP OF THE BRITISH EMPIRE EXHIBITION.

THIS Fellowship, of which the Prince of Wales is President, was founded in November, 1923, with the purpose of ensuring in the first place the full success of the British Empire Exhibition, and second, to encourage a "united family feeling" among the peoples of the Empire. The central committee hopes to extend the ranks of the Fellowship during 1925, and to maintain it as a permanent organisation to encourage trade and industry within the Empire. Membership enrolment forms may be obtained from the offices of the Central Committee, 16 Grosvenor-gardens, London, S.W.1.

AN INGENIOUS TRUSS PAD.

THE T. Beasley's Surgical Appliance Company of Faraday House, 10, Charing Cross-road, London, W.C., have submitted to us a hernia appliance which should obviate a great deal of the trouble and inconvenience which may be caused by an unadaptable pad. The pad is a pear-shaped rubber bag covered with leather, and by the aid of a small detachable inflating bulb any degree of resiliency can be given to it. The air-filled pad adapts itself to the part which it is intended to support, and is kept in position by webbing or rubber bands, the latter, of course, being useful for bathing, or in the bath where the appliance is permanently worn. The whole apparatus is easily washable, and the air-valves are so simple that there is little likelihood of their getting out of order.

SIGNED BULLETINS.

WE have received several communications arising out of the signing of bulletins regarding the health of distinguished patients, to which considerable point is given by the publication this week (see p. 727) of a detailed history of the last illness of President Ebert. There were reasons why no mystery should be attached to the circumstances of the death of the late German President, just as there are reasons for deploring from the historical point of view the lack of similar details concerning the death of prominent political persons. For 300 years ago the sudden or unexpected death of anyone whose activities as a statesman, or whose future opportunities as heir-apparent, might be prejudicial to a religious or political party, was attended by accusations of poisoning. Civilisation has left that sort of thing behind to-day, but it has a right to information as to the health of its leaders. Where the invalid is a member of the Royal Family the names of the medical men in attendance ought certainly to be affixed to what is a national message. Where again the patient is one who is holding or has held positions of undeniable national importance the same rule applies, and it is in accordance with this rule that the signed bulletins, with which the events of the last few weeks has familiarised us, have been in ethical order.

There can be no classification of important people in accordance with which it could be decided by any ethical committee when the health of some persons and not of other persons is a matter of such national importance that the public has a right to authoritative information guaranteed by signature. In the great majority of cases where undue publicity has appeared to be given to the names of practitioners, well known or otherwise, investigation has shown that the medical man in question had nothing to do with the unfortunate newspaper paragraph. The matter was the subject of considerable discussion by the General Medical Council during the winter session of 1922, when the difficulty of detecting what were real breaches of ethical conduct was recognised, though the existence of abuses was acknowledged and regretted.